AIR COMMAND HEADQUARTERS

OPERATIONAL RESEARCH DIVISION

STAFF NOTE 95/1

LIGHT UTILITY AIRCRAFT STUDY

by

P.E. DESMIER AND R.W. FUNK

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Staff Notes are written as informal records of the results of analyses, tentative views, comments on topics, methodology, which for one reason or another do not warrant or require formal publication. The contents are the responsibility of the author, and do not necessarily reflect the opinion of Air Command.

WINNIPEG, MANITOBA FEBRUARY 1995

ABSTRACT

This study provides the analytical foundation to determine the utility and requirement of a light transport aircraft. Utilization and loads data for the CC109 (Ottawa and Colorado Springs) and CC142 (Winnipeg) based aircraft, were analyzed to determine the light utility transport requirement for up to 10 duty passengers.

RÉSUMÉ

L'étude vise à fournir un outil analytique pour déterminer l'utilité d'un aéronef de transport léger et en évaluer le besoin. Les données concernant l'utilisation et la capacité de transport pour le CC109 (Ottawa et Colorado Springs) et le CC142 (Winnipeg) ont été analysées pour déterminer s'il est nécessaire de faire l'acquisition d'un avion de transport léger pouvant accueillir jusqu'à 10 passagers.

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LIGHT UTILITY AIRCRAFT STUDY

1 – INTRODUCTION

1. As a result of Budget '94, a Command decision was made regarding the future utilization of the CC-115 (Buffalo), CC-138 (Twin Otter) and the CC-109 (Cosmopolitan) fleets. The decision meant an elimination of the CC109 and a reduction in the light transport missions performed by the CC-115 and CC-138 fleets. The bulk taskings would, therefore, be taken up by the remaining 5 X CC115 in Comox, the 4 X CC138 in Yellowknife and the 2 X CC142 in Winnipeg.

2. Following the Commander's decision, a 17 May 94 Service Paper was used "... to determine if there is a requirement for additional aircraft to conduct the CF's light transport/command and liaison taskings, and if there is, to recommend the type of ac (aircraft) to provide this service ..."[1]. What became clear from the paper was the need to scrutinize the historical light transport requirements and weigh them in light of today's fiscal/operational realities[2].

3. In light of the above, SSO Reqrs requested a comprehensive analysis of CC109 and CC142 utilization and loads data in order to properly identify the actual light utility aircraft requirement [3]. The results were detailed Users and Tasks by percentages of flying hours and number of flights based on a specific set of flight duty codes. The results were to highlight the 10 passenger level which is identified as the separation between light and medium transport aircraft.

2 – DATA ANALYSIS

Data Reduction: CC109

4. Aircraft data was obtained from two sources. Utilization data, which details aircraft departure and arrival times as well as departure and destination points based on flight duty codes was extracted from Air Transport Groups (ATGs) Flying Hours Information System (FHIS). The FHIS is based on each squadron entering data from the Flight Authorization & Record of Flight (K1017) form into a file which is checked and consolidated by Air Transport Group Staff Officer/ADP (ATG/SO ADP. Aircraft loads data, which details number of passengers, weight of baggage and freight loaded on and off the aircraft was obtained from Air Command Headquarters Unit Terminal Loads System.

5. For this study, the greatest difficulty was trying to consolidate information from two sources, i.e., utilization and loads data. For example, the Loads database has information regarding flight numbers, dates and loads but only exists for those locations where an Air Movement Unit (AMU) exists. The utilization database, on the other hand, lists the flight numbers for all flights irrespective of whether an AMU was involved[1]. Consolidating the two sources of data required creating a Foxpro program to find the cases where flight numbers, departure dates and locations could be matched between the two databases. It counted the number of passengers loaded on or off the aircraft at each location where an AMU existed. An algorithm would then try to incorporate locations with no AMUs where the flight would continue through using preceding and succeeding records. Afterwards, a large number of records remained unmatched. These were visually checked between the two databases and linked where acceptable. In most cases, the mismatches occurred because the flight numbers utilized in the two databases were different.

[1] This difficulty was hard to comprehend since the K1017 form already has built into it the fields for entering flight and loads data. In other words, if the form had been filled out in its entirety by the operator, the requirement to amalgamate two databases from differing sources would not have been necessary. This issue is currently being addressed in Project 64102: Analysis of Aircraft Fleet Performance Statistics.

Data Reduction: CC142

6. Similarly for the CC142, utilization data was extracted from Air Command Headquarters Unit Terminal Loads System. Aircraft loads data was input into a Loads database directly from 402 Squadron K1017 forms. Similar data consolidation problems were encountered and corrected (to the best extent possible) for the CC142 as had been experienced with the CC109.

Data Analysis: CC109 and CC142

7. The final consolidated database for each aircraft contained the following fields: A/C tail number; Flight Number; Departure Airport; Destination Airport; Actual Departure Time; Actual Destination Time; Flight Time; Actual Date of Departure; Actual Date at Destination; Number of Passengers (result of Foxpro program: see ***Data Reduction: CC109***) and Flight Duty Code. Data was then analyzed for the period Fiscal Year (FY) 91/92 – FY 93/94 and the flight duty codes listed in Annex A.

3 – RESULTS

CC109 Results: Taskings

8. When matching records between the CC109 Loads and Utilization databases, 89% out of 2482 records of the Loads database provided useable matches. As listed in Annex A, there are two categories for analysis of the CC109: Taskings and Users. For taskings, records were extracted based on the number of passengers flown, the flying time and the number of flights for each tasking, i.e., QAP, NFA(International), etc. (See Annex A for a complete tasking glossary) and duty code. Annex B shows the results based on the duty codes listed in Annex A and the number of passengers (duty and non-duty) flown as:

a. the percentage of total flying hours;
b. the cumulative percentage of total flying hours;
c. the percentage of the total number of flights; and

d. the cumulative percentage of the number of flights[2].

9. A very significant problem is that the Loads database only accounts for duty passengers that get on the aircraft and not for those that get off. Therefore, a crude estimate of the average number of duty passengers was created by calculating the historical percentage of duty passengers out of the total number of passengers, i.e., ≈ 60% for the three year period. As an example, the cumulative percentage of total flying hours or the number of flights for a flight of 17 passengers is deemed to consist of approximately 10 duty passengers. The remainder of the analysis is dependent on the applicability of this crude estimate.

10. The CC109 Duty Pax (passenger) curves in Annex B were calculated through polynomial regressions of the total passenger curves and readjusted for the number of duty passengers. Tables 1 and 2 list the cumulative percentage of total flying hours and number of flights for up to 10 duty passengers for Ottawa and Colorado Springs based CC109 respectively (Tasking abbreviations are listed in Annex A).

Tasking	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
QAP	800.8	416	91%	92%
NFA (Int'l)	220.7	79	73%	74%
NFA (Dom)	467.4	230	70%	66%
VIP (CMIL)	596.7	261	80%	80%
VIP (Other)	145.9	67	83%	81%
Misc	50.1	16	66%	66%

Table 1. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (CC-109 – Ottawa (TASKINGS))

[2] Total flying hours refers to the hours flown and total number of flights refers to the number of flights for the duty codes listed in Annex A instead of all duty codes. Consequently the percentage does not reflect that portion of *all* hours/flights flown in the three year period. The total hours flown and total number of flights (with pax) for all duty codes are 3467.5 hours and 1679 flights for Ottawa based CC109 and 481.3 hours and 158 flights for Colorado Springs based aircraft. It is therefore a simple exercise to determine results for the Tables and Figures that reflect all duty codes.

Tasking	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
NFA (Int'l)	257.4	84	58%	60%
VIP (CMIL)	89.2	27	44%	45%

Table 2. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (CC-109 – Colorado Springs (TASKINGS))

11. Figures 1a – 1d show, for passenger flights only, the percentage of the total flying hours and the total number of flights which were dedicated to the various taskings.

CC109 TASKINGS (PAX FLIGHTS ONLY) (FY'S 91/92 – 93/94)
PERCENTAGE OF FLYING HOURS AND NUMBER OF FLIGHTS

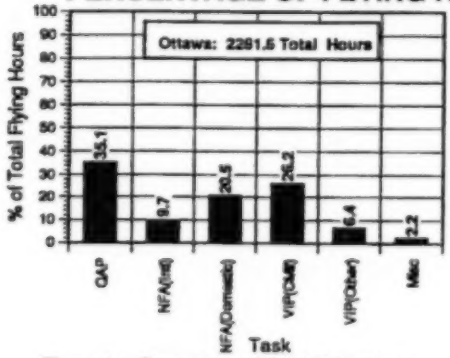

Figure 1a. Percentage of Total Flying Hours

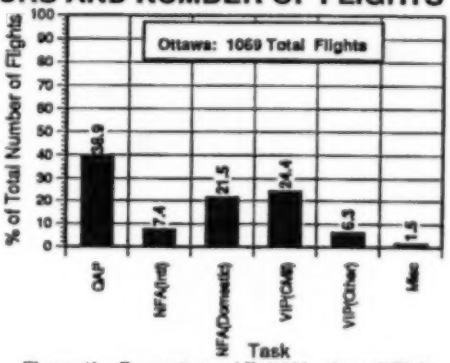

Figure 1b. Percentage of Total Number of Flights

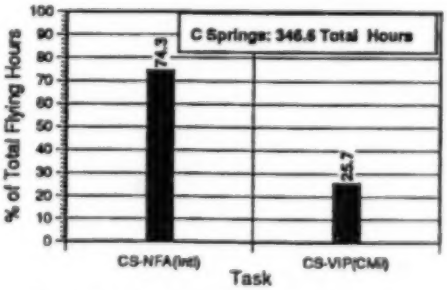

Figure 1c. Percentage of Total Flying Hours

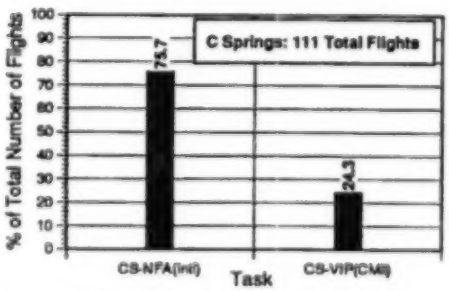

Figure 1d. Percentage of Total Number of Flights

CC109 Results: Users

12. Records for each user were extracted for the number of passengers flown, the flying time and the number of flights, i.e., DGT, NDHQ-Log, etc. (See Annex A for a complete user glossary) and duty code. Annex C shows the results based on the duty codes listed in Annex A and the number of passengers (duty and non-duty) flown. The format for Annex C is the same as for Annex B.

13. Tables 3 and 4 list the cumulative percentage of total flying hours and number of flights for up to 10 duty passengers for Ottawa and Colorado Springs based CC109 respectively.

User	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
DGT	753.6	397	92%	92%
Log	389.8	158	80%	80%
Contingency	388.3	192	73%	71%
AIRCOM	310.6	124	73%	69%
ATG	44.5	18	74%	75%
LFC	184.4	93	70%	74%
MARCOM	177.6	78	75%	74%
CFSU	32.8	9	100%	100%

Table 3. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (CC-109 – Ottawa (USERS))

User	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
CFSU	335.9	108	55%	53%

Table 4. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (CC-109 – Colorado Springs (USERS))

14. Figures 2a – 2d show, for passenger flights only, the percentage of the total flying hours and the total number of flights which were dedicated to the various users.

CC109 USERS (PAX FLIGHTS ONLY) (FY'S 91/92 – 93/94)
PERCENTAGE OF FLYING HOURS AND NUMBER OF FLIGHTS

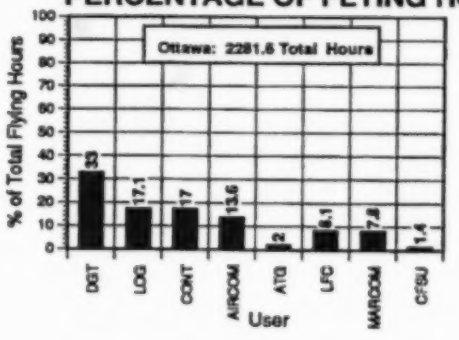

Figure 2a. Percentage of Total Flying Hours

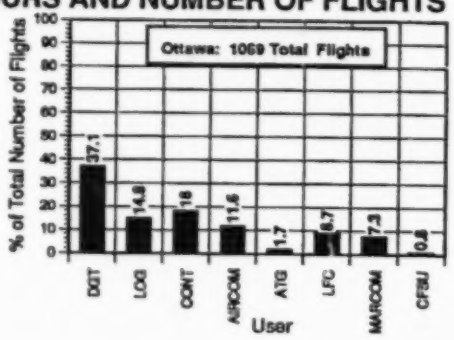

Figure 2b. Percentage of Total Number of Flights

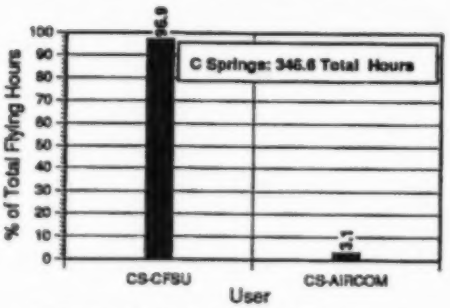

Figure 2c. Percentage of Total Flying Hours

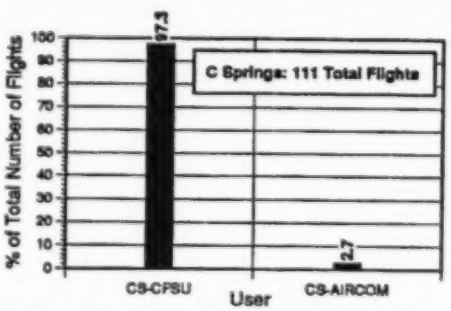

Figure 2d. Percentage of Total Number of Flights

15. Annex D shows the amalgamated results of Annex B or Annex C, i.e., for all taskings or users. The cumulative percentages for up to 10 duty passengers are shown in Table 5[3].

[3] The cumulative percentages are given as the averages of Tables 1 and 2 and not from the regression curves of Annex C.

	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
Ottawa	2281.6	1069	77%	77%
C Springs	346.6	111	51%	53%

Table 5. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (All Taskings)

16. The utilization of multiple aircraft is a particularly strong indicator of scheduling conflicts. Figure 3 shows the percentage of time (in days) in which 1, 2, 3 or 4 aircraft were active in the period 1 Apr 91 – 31 Mar 94 for the specific duty codes listed in Annex A.

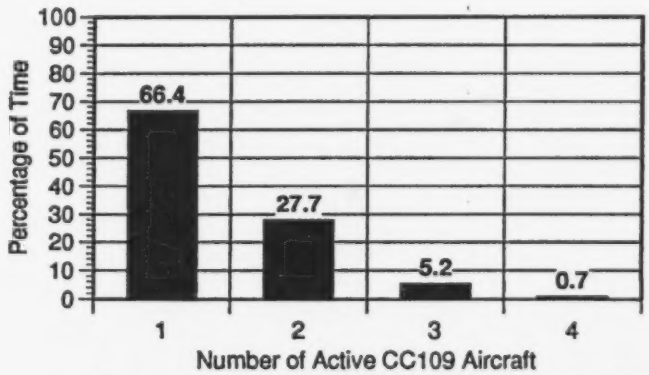

Figure 3. Percentage of Time (Days) That 1 to 4 CC109 Aircraft Were Active in the Period 1 Apr 91 – 31 Mar 94 (Specific Duty Codes)

CC142 Results

17. As listed in Table A-3 of Annex A, there is only one category for analysis of the CC142: Taskings. When matching records between the CC142 Loads and Utilization databases, 90% out of 1208 records of the Loads database provided useable matches. Records were extracted based on the number of passengers flown, the flying time and the number of flights for each tasking, i.e., Transport, VIP(AIRCOM), etc. and duty code. Annex E shows the

results based on the duty codes listed in Annex A and the number of passengers (duty and non-duty) flown. The format for Annex E (CC142 Taskings) is the same as Annex B (CC109 Taskings).

18. As for the CC109, the CC142 Loads database only accounts for duty passengers that get on the aircraft and not for those that get off. A crude estimate of the average number of duty passengers that were carried is calculated through the historical percentage of duty passengers out of the total number of passengers, i.e., ≈ 62% for the three year period. Therefore, in calculating the cumulative percentage of total flying hours or the number of flights, a flight of 16 passengers would consist of approximately 10 duty passengers.

19. The CC142 Duty Pax curves in Annex E were calculated through polynomial regressions of the total passenger curves and readjusted for the number of duty passengers. Table 6 lists the cumulative percentage of total flying hours and number of flights for up to 10 duty passengers over the three year period.

Tasking	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
Transport	213.3	76	73%	66%
VIP (AIRCOM)	892.9	302	90%	90%
VIP (NDHQ)	165.4	56	94%	91%
NFA	400.0	142	76%	67%

Table 6. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (CC-142 – Winnipeg (TASKINGS))

20. Figures 4a and 4b show, for CC142 passenger flights only, the percentage of the total flying hours and the total number of flights which were dedicated to the various users[4]. The results are presented for each year in the three year period to highlight the tasking trend as specified by the sponsor.

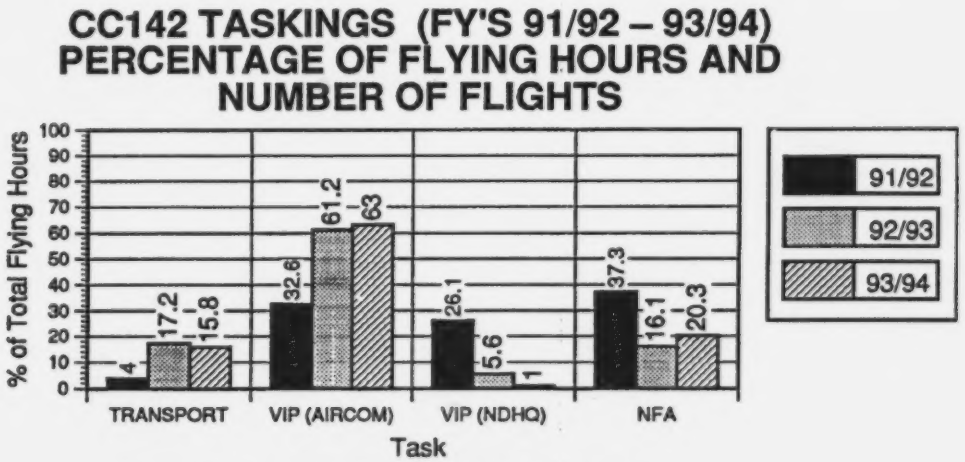

Figure 4a. Percentage of Total Flying Hours

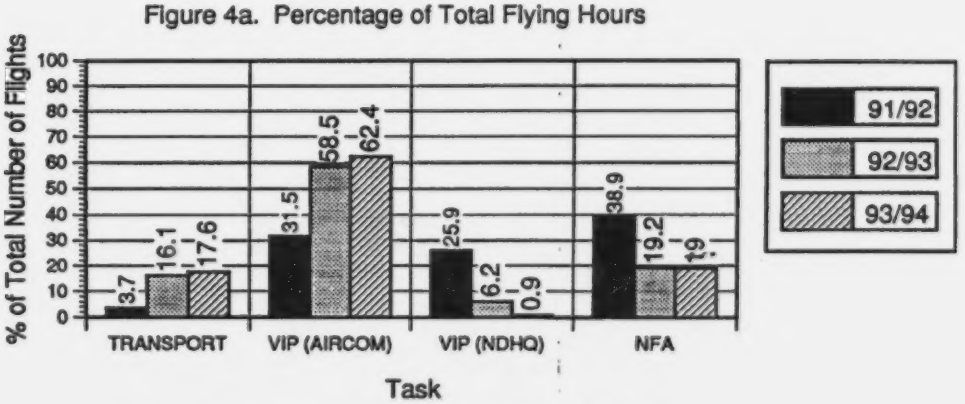

Figure 4b. Percentage of Total Number of Flights

[4] As for the CC109, total flying hours and total number of flights refer to the hours flown and the number of flights for the duty codes listed in Annex A and not for all duty codes. Hence the percentage does not reflect that portion of *all* hours/flights flown in the three year period. The calculated total hours flown and total number of flights (with pax) for all duty codes are 9290.4 hours and 3300 flights for Winnipeg based CC142 aircraft. For FY 91/92 they are (2916.0,1024); for FY 92/93 (3173.2, 1136); for FY 93/94 (3201.2, 1140) for flying hours and number of flights respectively. It is therefore a simple exercise to determine results for the Tables and Figures that reflect all other duty codes.

21. Annex F shows the amalgamated results of Annex E, i.e., for all taskings. The cumulative percentages for up to 10 duty passengers are shown in Table 7[5].

	Total Flying Hours	Total Number of Flights	Cumulative % of Flying Hours	Cumulative % of Number of Flights
Winnipeg	1671.6	576	83%	79%

Table 7. Cumulative Percentage of Flying Hours and Number of Flights for up to 10 Duty Passengers (All Taskings)

22.. Figure 5 shows the percentage of time (in days) in which 1 or 2 aircraft were active in the period 1 Apr 91 – 31 Mar 94 for the specific duty codes listed in Annex A.

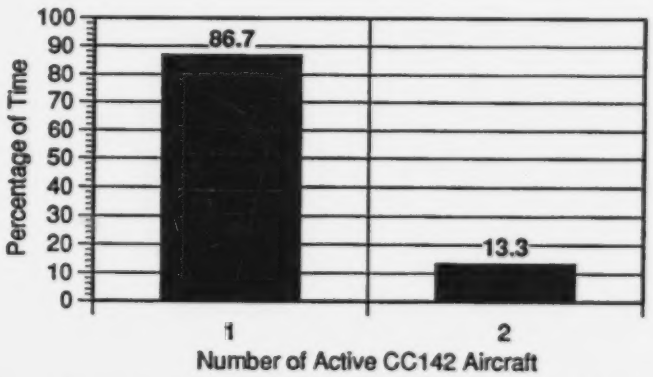

Figure 5. Percentage of Time (Days) That 1or 2 CC142 Aircraft Were Active in the Period 1 Apr 91 – 31 March 94 (Specific Duty Codes)

[5] The cumulative percentages are given as the averages of Table 6 and not from the regression curves of Annex F.

4 – DISCUSSION

CC109: Ottawa

23. Bearing in mind the difficulties inherent in acquiring useable data for this study, the results show the utility and requirement of a light transport aircraft. Out of 2281.6 flying hours and 1069 flights for the duty codes in Annex A, 77% of flying hours and 77% of flights were used to carry up to 10 duty passengers (Table 5).

24. When looking at specific taskings, QAP made the greatest demand on the CC109 with 35.1% of flying hours and 38.9% of flights. The least demand was Misc which utilized only 2.2% of flying hours and 1.5% of flights (Figures 1a and 1b). For duty passengers, 91% of QAP flying hours (92% of flights) were utilized carrying up to 10 duty passengers, whereas in the lower end of the scale, miscellaneous events used 66% of their flying hours and 66% of flights carrying up to 10 duty passengers(Table 1). Taskings in order from highest to lowest of CC109 utilization are (Table 1):

$$QAP > VIP(CMIL) > VIP(Domestic) > NFA(Int'l) > VIP(Other) > Misc$$

25. From the perspective of CC109 users, DGT was the highest user, utilizing 33% of flying hours and 37.1% of flights. CFSU was the lowest user with 1.4% of flying hours and 0.8% of flights. For duty passengers, 92% of DGT flying hours and 92% of flights were utilized carrying up to up to 10 duty passengers. Users in order from highest to lowest of CC109 utilization are (Table 3):

$$DGT > Log > Contingency > AIRCOM > LFC > MARCOM > ATG > CFSU$$

26. Regardless of the demand for utility transport, the CC109 was not heavily utilized in the airlift role as becomes evident in Figure 3. As shown, in the three year period, all four aircraft were active for only 0.7% of the time with only one aircraft being active 66.4% of the time. The lack of utilization may be due to the poor maintenance record as much as from the lack of requirement.

CC109: Colorado Springs

27. For Taskings, of the duty codes listed in Table A-2, 51% of flying hours and 53% of flights were used to carry up to 10 duty passengers (Table 5). As Figures 1c and 1d show, NFA (International) provided the greatest demand with 74.3% of flying hours and 75.7% of flights. VIP (CMIL) provided the least demand with 25.7% of flying hours and 24.3% of flights. For duty passengers, 58% of NFA flying hours (60% of flights)) were utilized carrying up to 10 duty passengers. VIP (CMIL) required a larger aircraft with only 44% of flying hours (45% of flights) carrying under 10 duty passengers (Table 2).

28. For Users, CFSU was the highest light utility user, utilizing 96.9% of flying hours and 97.3% of flights. AIRCOM was the lowest user with 3.1% of flying hours and 2.7% of flights. For duty passengers, 55% of CFSU flying hours and 53% of flights were utilized carrying up to up to 10 duty passengers. In the three year period, AIRCOM only had three pax flights for 10.7 flying hours.

CC142: Winnipeg[6]

29. Out of all duty codes, 18% of all flying hours and 17% of all flights (with pax) were utilized for duty codes 830–833 inclusive (Table A-3 duty codes). Of these, 83% of flying hours and 79% of flights were used to carry up to 10 duty passengers (Table 7).

30. For taskings, VIP (AIRCOM) provided the greatest demand, which increased from 32.6% in FY 91/92 to 63.0% in FY 93/94 (an increase of more than 93%) in flying hours and 31.5% in FY 91/92 to 62.4% in FY 93/94 (an increase of more than 98%) in the number of flights. As Figure 4a and 4b show, the largest jump in utilization occurred in the FY 91/92 – FY 92/93 time frame.

[6] Note that the analysis for the CC142 was limited to tail numbers 1 and 2 while the other four CT-142's have been used to supplement the transport aircraft for small loads. Also, a great deal of CC effort in the early years (91–93) focused on training pilots, which the CT can now do if necessary.

31. Except for transport taskings, it appears that the increase in VIP (AIRCOM) demand was offset by a decrease in the other taskings. For duty passengers, 90% of VIP (AIRCOM) flying hours (90% of flights) were utilized carrying up to 10 duty passengers. In the lower end of the scale, Transport had the largest loads with 73% of their flying hours and 66% of flights carrying less than 10 duty passengers(Table 6). Taskings in order from highest to lowest in terms of CC142 utilization are (Table 6):

$$VIP(AIRCOM) > NFA > Transport > VIP(NDHQ)$$

5 – CONCLUSIONS

32. This study provides the analytical foundation to determine the utility and requirement of a light transport aircraft. To summarize:

CC109 Utility

a. The results for the CC109 Ottawa based aircraft show that for FY's 91/92–93/94, on average 77% of all flying hours and all flights for airlift taskings (Annex A duty codes: Table A-1 and A-2), were flown with 10 duty passengers or less. The remaining 23% were flown at a greater than 10 duty passenger capacity.

b. Colorado Springs CC109 carried larger loads with 51% of flying hours and 53% of flights for airlift taskings with 10 duty passengers or less. That leaves 49% of flying hours and 47% of flights with more than 10 duty passengers.

c. CC109 aircraft utilization with respect to airlift taskings was such that one aircraft was utilized for 66.4% of the time, two aircraft for 27.7%, three aircraft for 5.2% and all four aircraft for only 0.7% of the time.

CC142 Utility

a. CC142 results show that for FY's 91/92 – 93/94, on average 83% of all flying hours and 79% of all flights for airlift taskings (Annex A duty codes: Table A-3), were flown with 10 duty passengers or less. The remaining 17% and 21% respectively were flown at a greater than 10 duty passenger capacity.

b. Trend analysis shows that the greatest demand for CC142 came from VIP (AIRCOM) taskings, which increased from 32.6% in FY 91/92 to 63.0% in FY 93/94 (an increase of more than 93%) in flying hours and from 31.5% in FY 91/92 to 62.4% in FY 93/94 (an increase of more than 98%) in the number of flights. The largest increase occurred in the FY 91/92 – FY 92/93 time frame.

c. CC142 aircraft utilization for airlift taskings was such that one aircraft was utilized for 86.7% of the time, and the two aircraft were utilized for 13.3% of the time.

33. The evidence provided by the statistical evidence indicates that the CC109 and CC142 have been predominantly utilized in the light transport role (less than 10 duty passengers) even though the airframes are capable of handling much larger loads.

REFERENCES

[1] 3550-7 (SSO Reqrs) 19 May 94.

[2] 3500-7 (SO Reqrs) 14 Oct 94.

[3] 3550-2 (DCOS Op Rsch) 14 Oct 94.

FLIGHT DUTY CODES — CC109

CODE	TASKING	USER
01C04	QAP	DGT – Service Flight
02C10	QAP	NDHQ – Log
02D04	Miscellaneous	NDHQ – Log
02D20	NFA (International)	NDHQ – Log
02D29	NFA (Domestic)	NDHQ – Log
02D30	NFA (Domestic)	NDHQ – Log
02E23	Miscellaneous	NDHQ – Log
02N19	VIP (Other)	NDHQ – Log
02X58	VIP (CMIL)	NDHQ – Log
03D24	NFA (International)	NDHQ – Contingency
03D29	NFA (Domestic)	NDHQ – Contingency
03E23	Miscellaneous	NDHQ – Contingency
03P08	Miscellaneous	NDHQ – Contingency
03T01	VIP (Other)	NDHQ – Contingency
03T02	VIP (Other)	NDHQ – Contingency
03T52	VIP (Other)	NDHQ – Contingency
03T54	VIP (Other)	NDHQ – Contingency
03X01	VIP (Other)	NDHQ – Contingency
03X45	VIP (Other)	NDHQ – Contingency
03X53	VIP (Other)	NDHQ – Contingency
03X54	VIP (Other)	NDHQ – Contingency
03X55	VIP (Other)	NDHQ – Contingency
03X56	VIP (Other)	NDHQ – Contingency
03X57	VIP (Other)	NDHQ – Contingency
03X58	VIP (CMIL)	NDHQ – Contingency

Table A-1. Flight Duty Codes for CC109 (Ottawa)

CODE	TASKING	USER
04D20	NFA (International)	AIRCOM
04D29	NFA (Domestic)	AIRCOM
04X48	Miscellaneous	AIRCOM
04X58	VIP (CMIL)	AIRCOM
05D29	NFA (Domestic)	ATG
05H55	Miscellaneous	ATG
05M73	Miscellaneous	ATG
05M82	Miscellaneous	ATG
06D20	NFA (International)	LFC
06D24	NFA (International)	LFC
06D29	NFA (Domestic)	LFC
06X58	VIP (CMIL)	LFC
07D20	NFA (International)	MARCOM
07D29	NFA (Domestic)	MARCOM
07X58	VIP (CMIL)	MARCOM
10D20	NFA (International)	CFSU

Table A-1 (Cont'd). Flight Duty Codes for CC109 (Ottawa)

CODE	TASKING	USER
04D20	NFA (International)	AIRCOM
09D20	NFA (International)	CFNA
10D20	NFA (International)	CFSU – Colorado Springs
10X56	VIP (FMIL)	CFSU – Colorado Springs
10X58	VIP (CMIL)	CFSU – Colorado Springs

Table A-2. Flight Duty Codes for CC109 (Colorado Springs)

FLIGHT DUTY CODES — CC142

CODE	TASKING
830	Transport
831	VIP (AIRCOM)
832	VIP (NDHQ)
833	NFA

Table A-3. Flight Duty Codes for CC142 (Winnipeg)

ABBREVIATION	DEFINITION
QAP	Quarterly Airlift Plan
NFA	Non Forecast Airlift
CMIL	Canadian Military
FMIL	Foreign Military
DGT	Director General Transportation
CFSU	Canadian Forces Support Unit
CFNA	Canadian Forces Northern Area

Table A-4. Table Glossary

CC109 – OTTAWA (TASKINGS)

QUARTERLY AIRLIFT PLAN (FY's 91/92 – 93/94)
(Total Flying Hours: 800.8; Total # of Flights: 416)

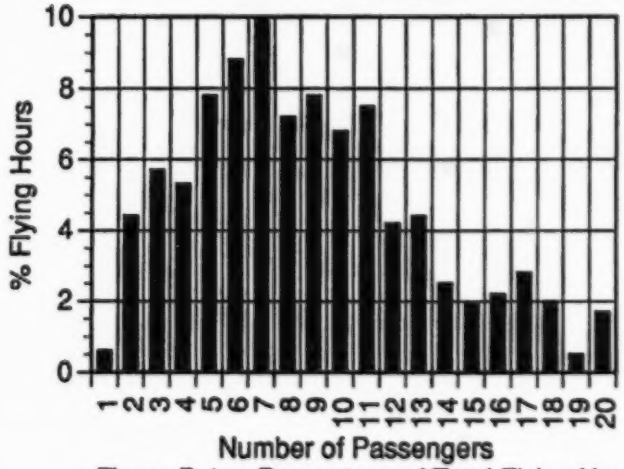

Figure B-1a. Percentage of Total Flying Hours

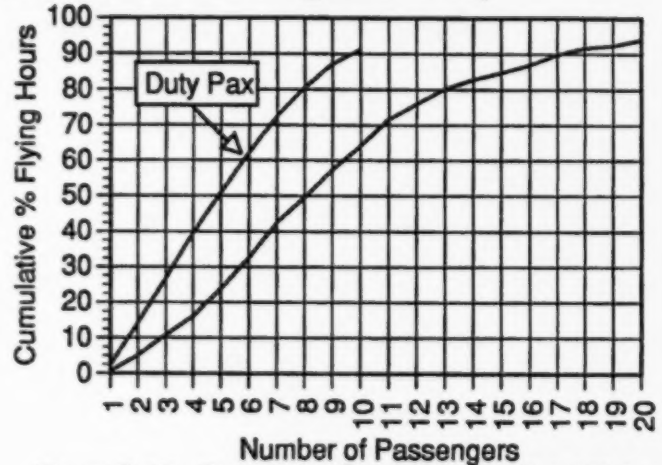

Figure B-1b. Cumulative Percentage of Total Flying Hours

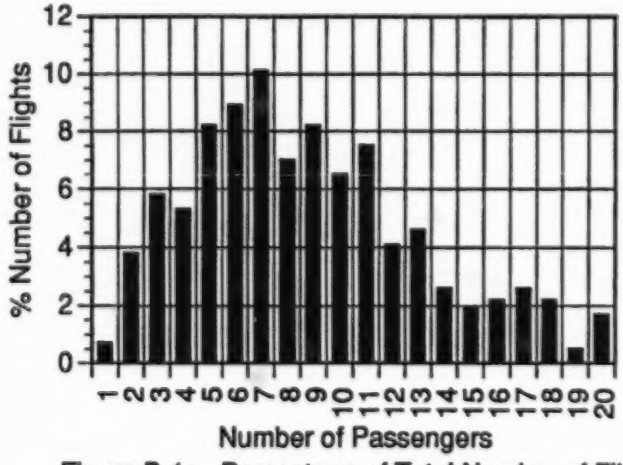

Figure B-1c. Percentage of Total Number of Flights

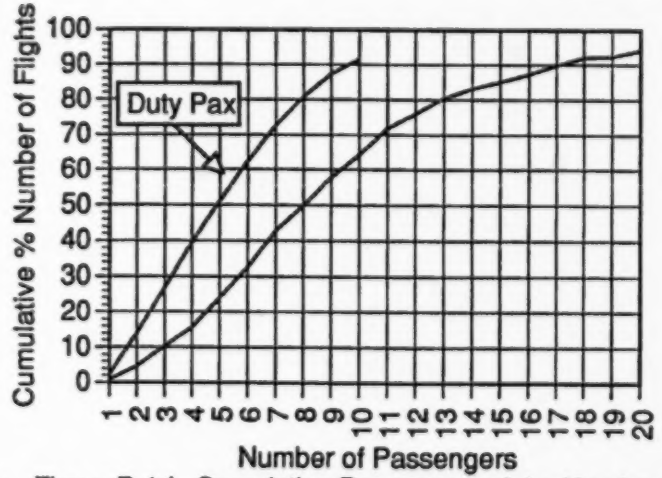

Figure B-1d. Cumulative Percentage of the Number of Flights

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CC109 – OTTAWA (TASKINGS)

NFA (INTERNATIONAL) (FY's 91/92 – 93/94)
(Total Flying Hours: 220.7; Total # of Flights: 79)

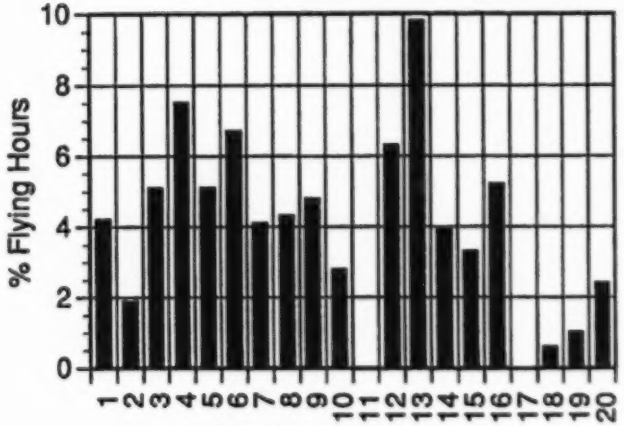

Figure B-2a. Percentage of Total Flying Hours

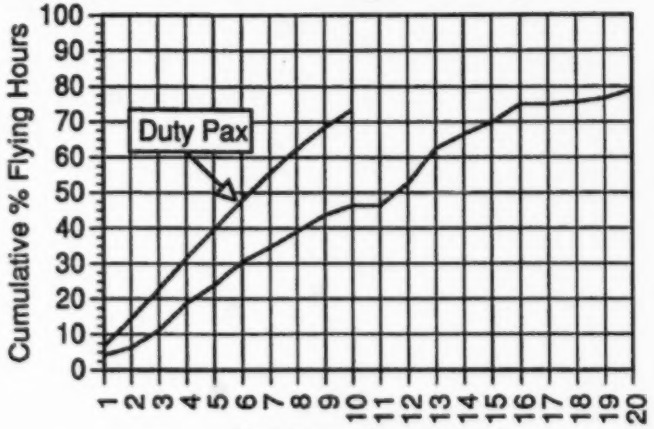

Figure B-2b. Cumulative Percentage of Total Flying Hours

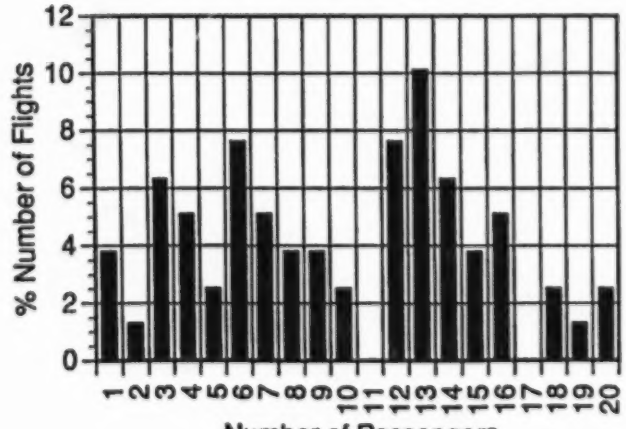

Figure B-2c. Percentage of Total Number of Flights

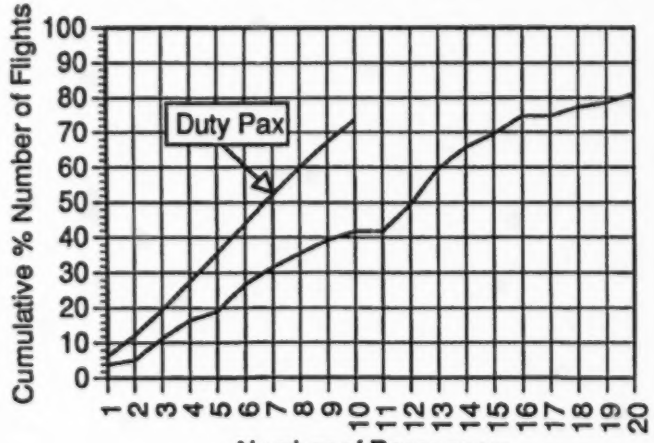

Figure B-2d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (TASKINGS)

NFA (DOMESTIC) (FY's 91/92 – 93/94)

(Total Flying Hours: 467.4; Total # of Flights: 230)

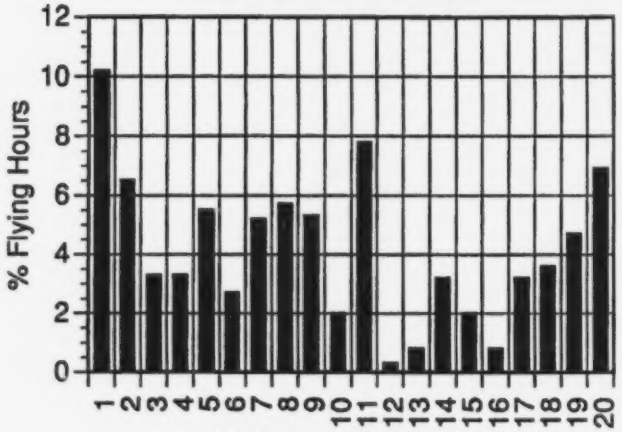

Figure B-3a. Percentage of Total Flying Hours

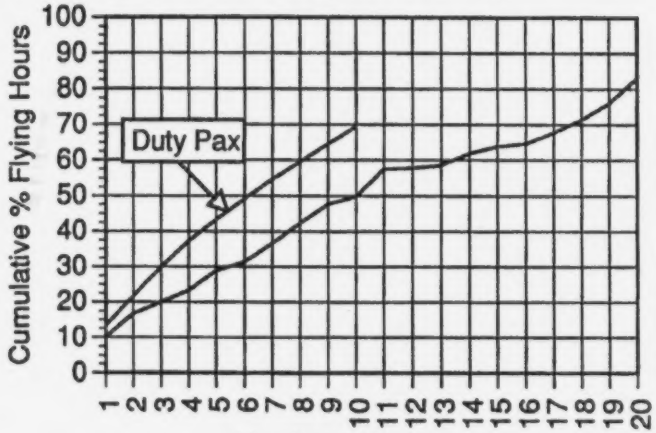

Figure B-3b. Cumulative Percentage of Total Flying Hours

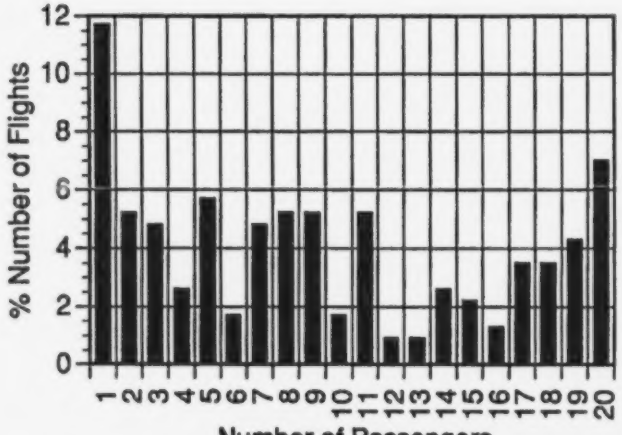

Figure B-3c. Percentage of Total Number of Flights

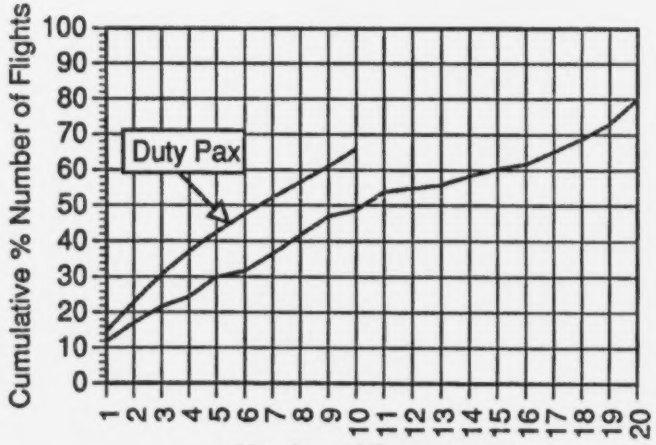

Figure B-3d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (TASKINGS)

VIP (CMIL) (FY's 91/92 – 93/94)

(Total Flying Hours: 596.7; Total # of Flights: 261

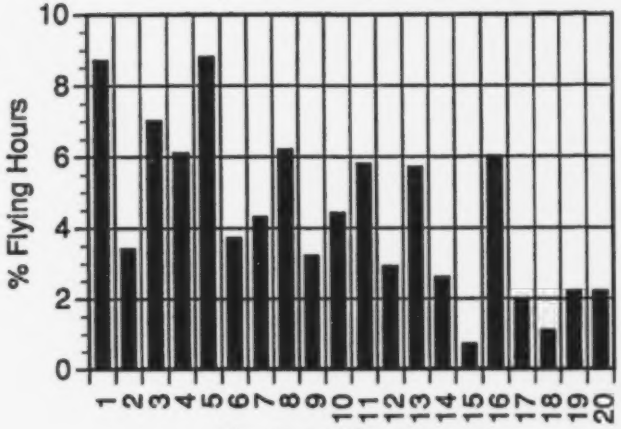

Figure B-4a. Percentage of Total Flying Hours

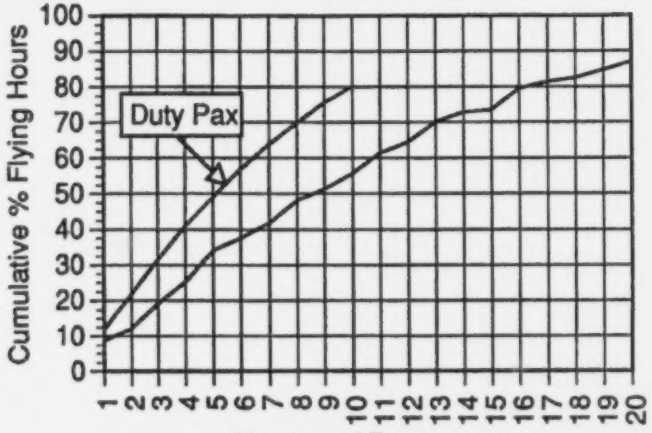

Figure B-4b. Cumulative Percentage of Total Flying Hours

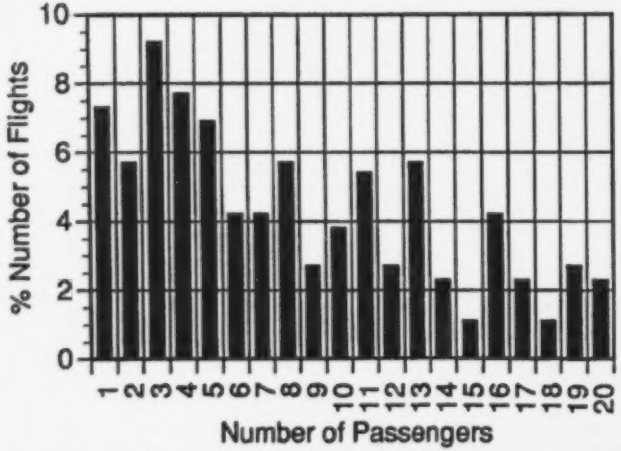

Figure B-4c. Percentage of Total Number of Flights

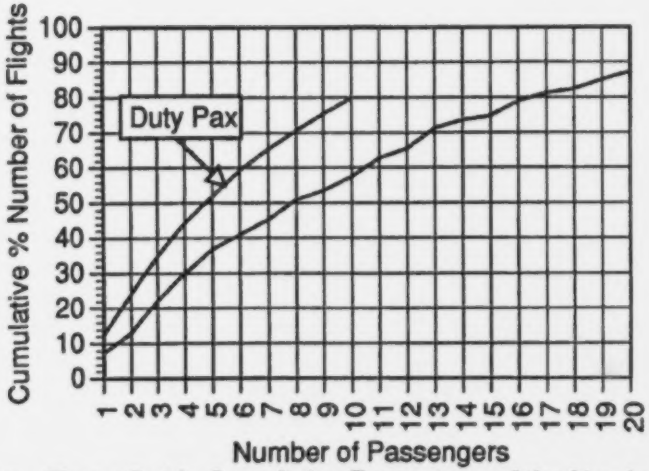

Figure B-4d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (TASKINGS)

VIP (OTHER) (FY's 91/92 – 93/94)

(Total Flying Hours: 145.9; Total # of Flights: 67

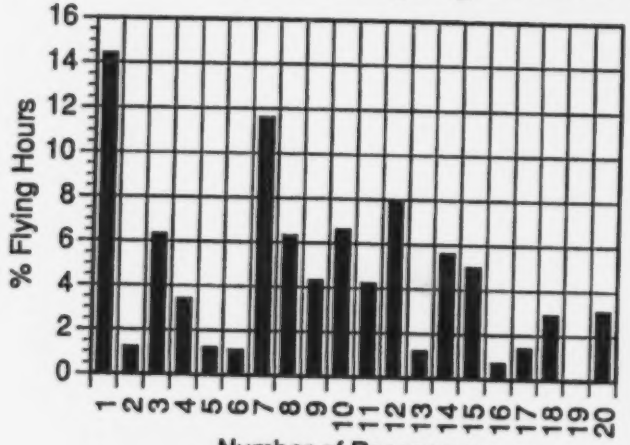

Figure B-5a. Percentage of Total Flying Hours

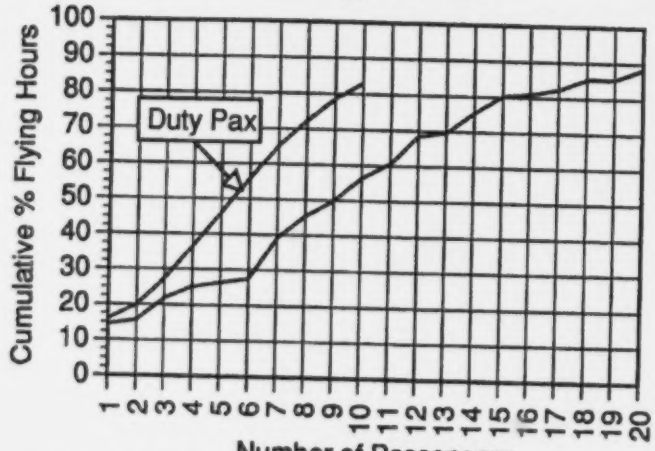

Figure B-5b. Cumulative Percentage of Total Flying Hours

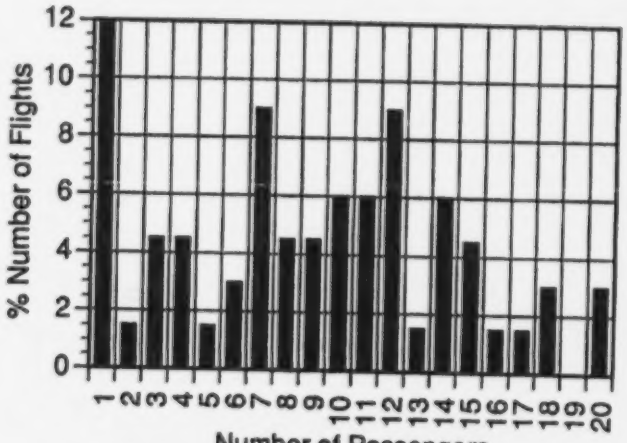

Figure B-5c. Percentage of Total Number of Flights

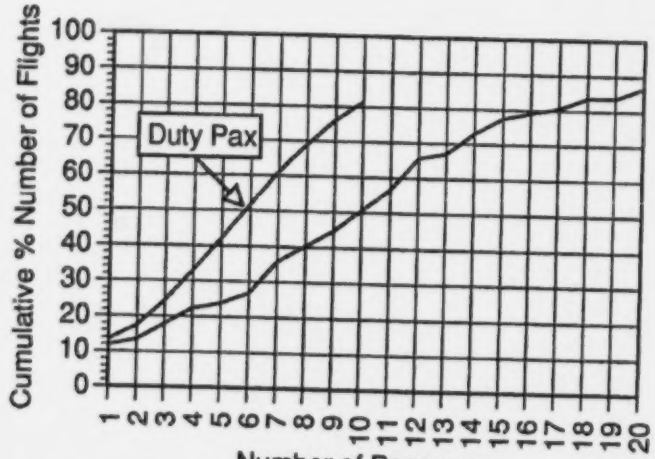

Figure B-5d. Cumulative Percentage of the Number of Flights

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CC109 – OTTAWA (TASKINGS)

MISCELLANEOUS (FY's 91/92 – 93/94)

(Total Flying Hours: 50.1; Total # of Flights: 16)

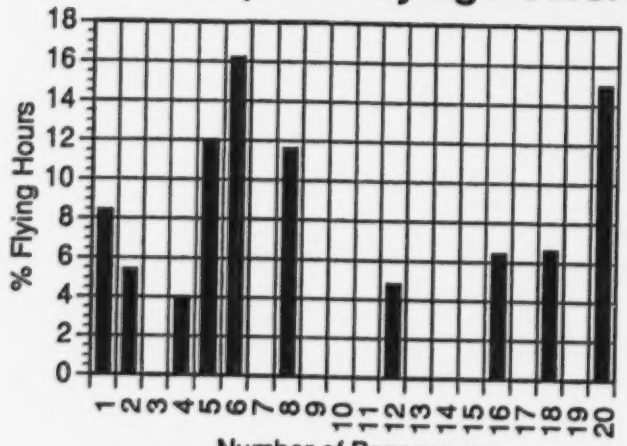

Figure B-6a. Percentage of Total Flying Hours

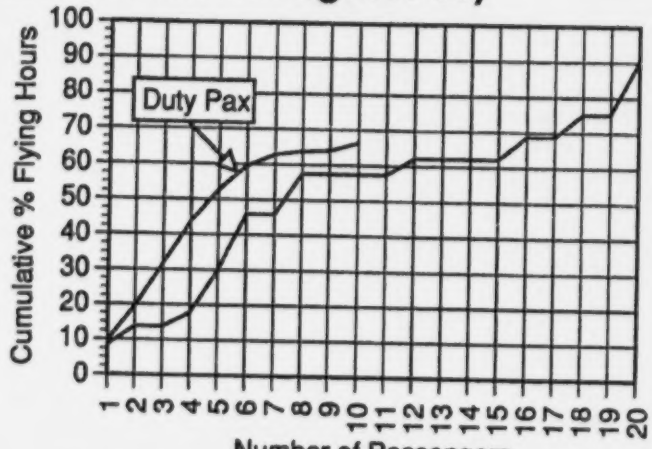

Figure B-6b. Cumulative Percentage of Total Flying Hours

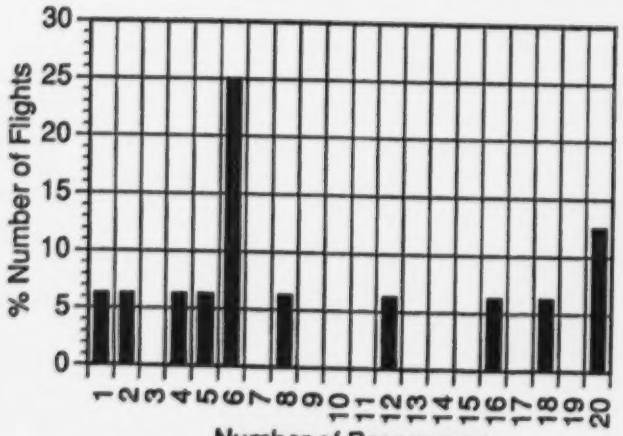

Figure B-6c. Percentage of Total Number of Flights

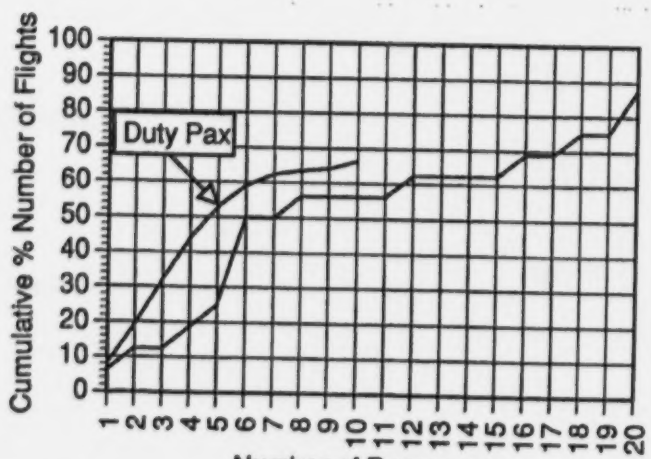

Figure B-6d. Cumulative Percentage of the Number of Flights

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CC109 –COLORADO SPRINGS (TASKINGS)

NFA (INTERNATIONAL) (FY's 91/92 – 93/94)
(Total Flying Hours: 257.4; Total # of Flights: 84)

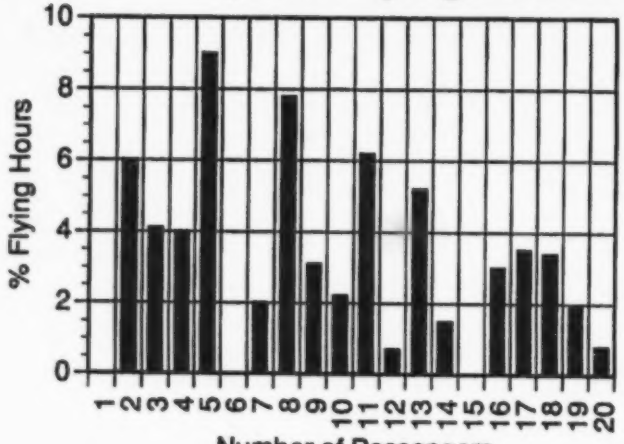

Figure B-7a. Percentage of Total Flying Hours

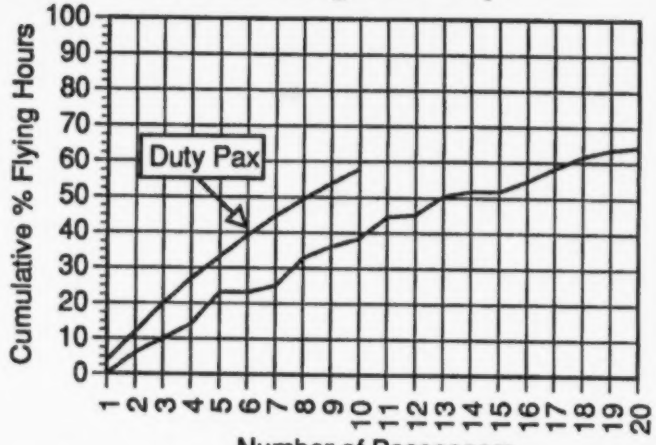

Figure B-7b. Cumulative Percentage of Total Flying Hours

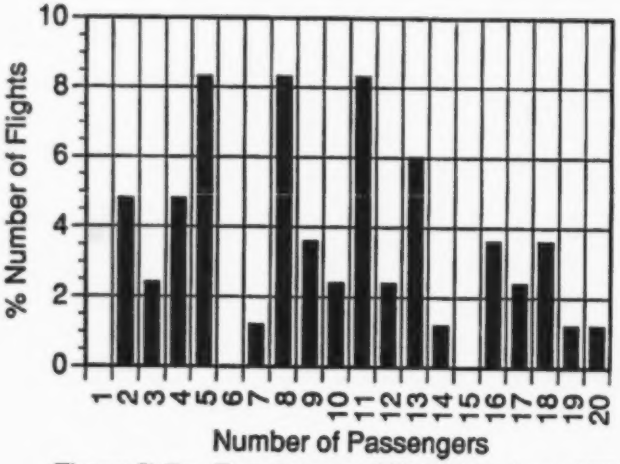

Figure B-7c. Percentage of Total Number of Flights

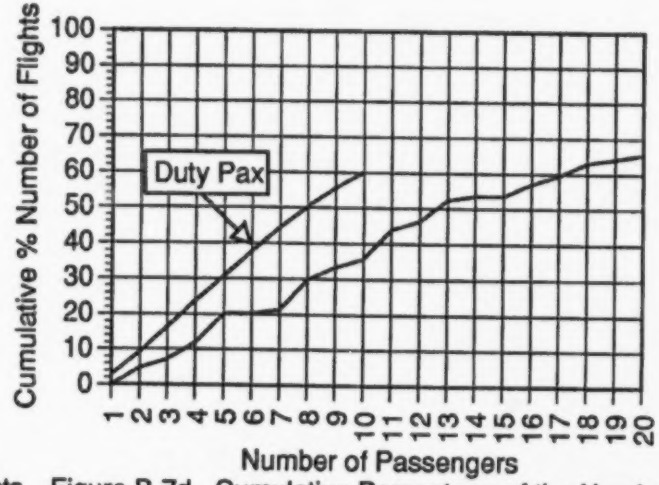

Figure B-7d. Cumulative Percentage of the Number of Flights

CC109 – COLORADO SPRINGS (TASKINGS)

VIP (CMIL) (FY's 91/92 – 93/94)

(Total Flying Hours: 89.2; Total # of Flights: 27

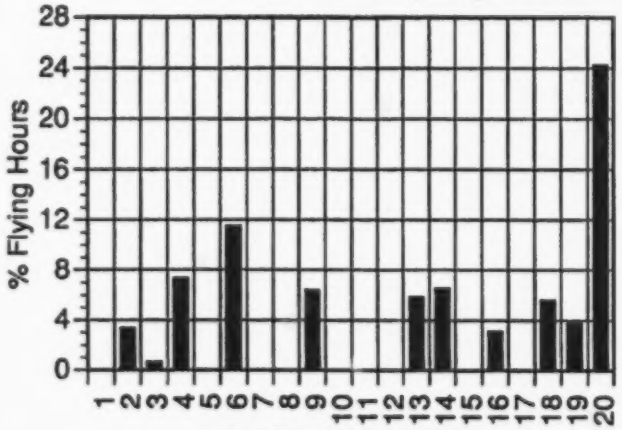

Figure B-8a. Percentage of Total Flying Hours

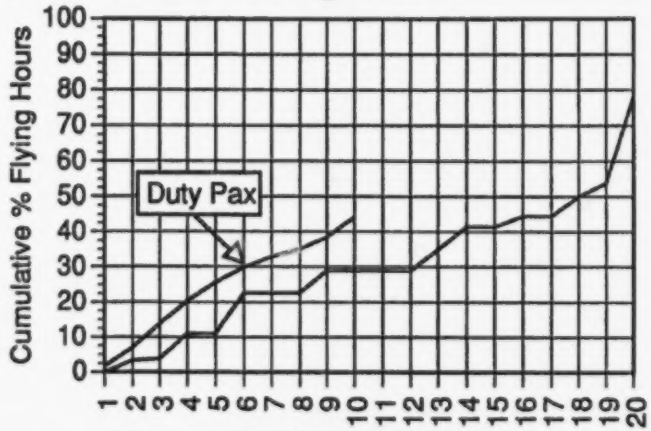

Figure B-8b. Cumulative Percentage of Total Flying Hours

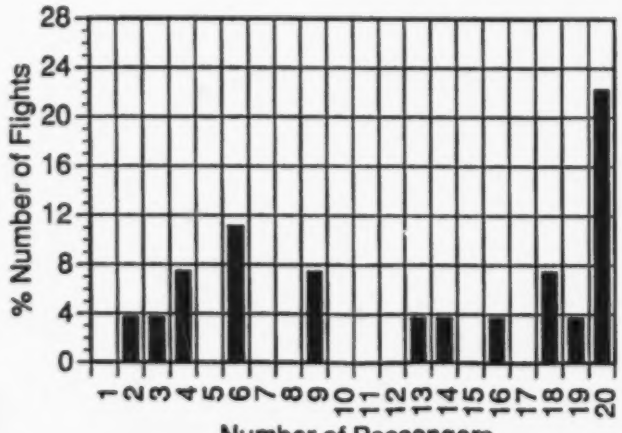

Figure B-8c. Percentage of Total Number of Flights

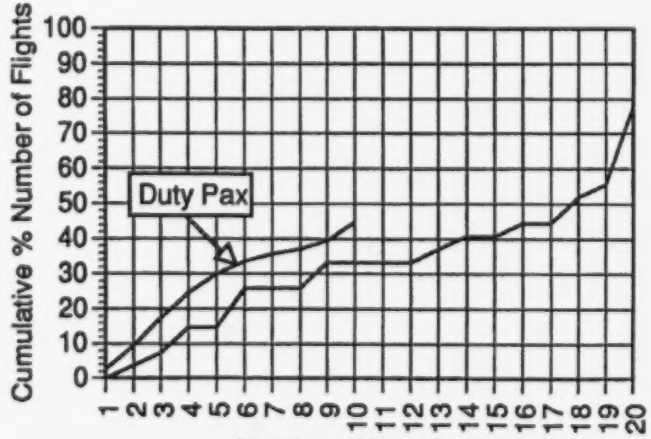

Figure B-8d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

DGT – SERVICE FLIGHTS (FY's 91/92 – 93/94)

(Total Flying Hours: 753.6 Total # of Flights: 397

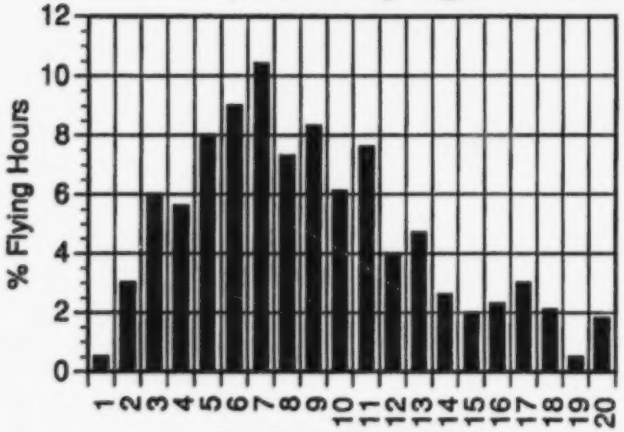

Figure C-1a. Percentage of Total Flying Hours

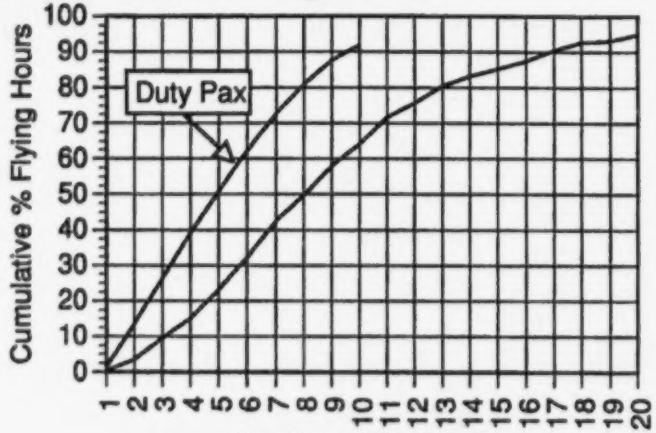

Figure C-1b. Cumulative Percentage of Total Flying Hours

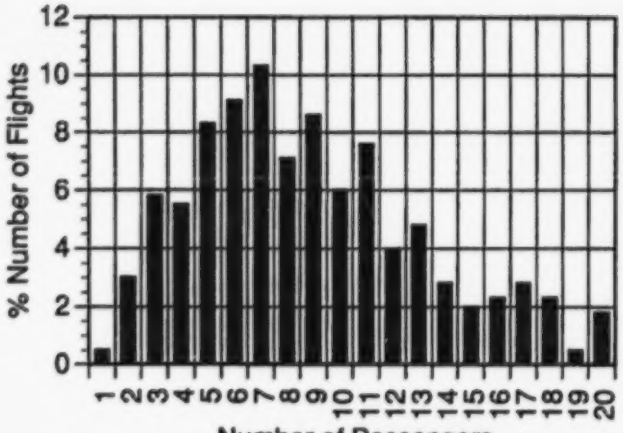

Figure C-1c. Percentage of Total Number of Flights

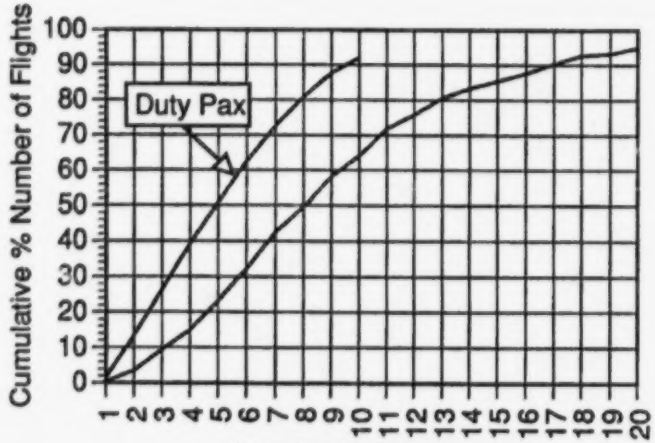

Figure C-1d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

NDHQ – LOG (FY's 91/92 – 93/94)

(Total Flying Hours: 389.8; Total # of Flights: 158)

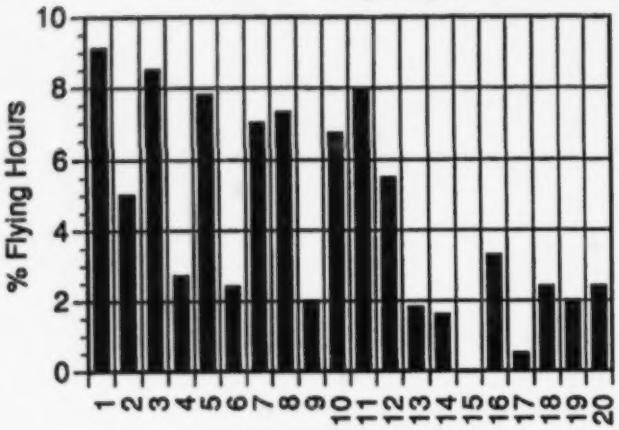

Figure C-2a. Percentage of Total Flying Hours

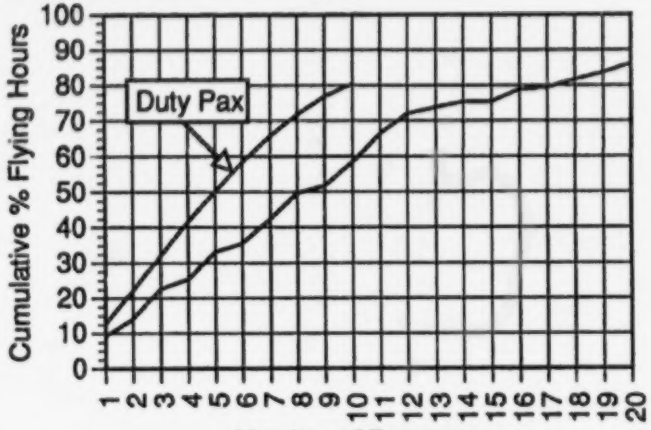

Figure C-2b. Cumulative Percentage of Total Flying Hours

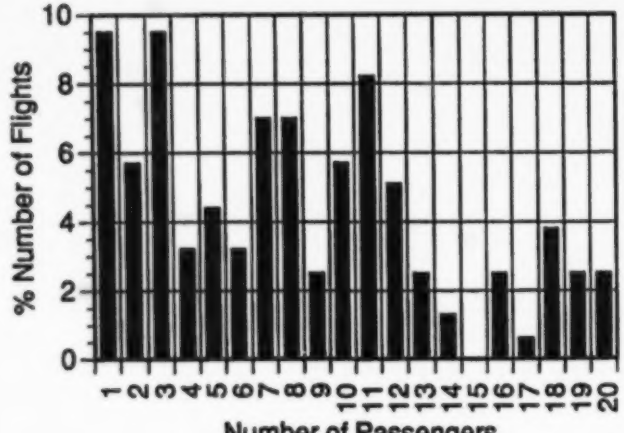

Figure C-2c. Percentage of Total Number of Flights

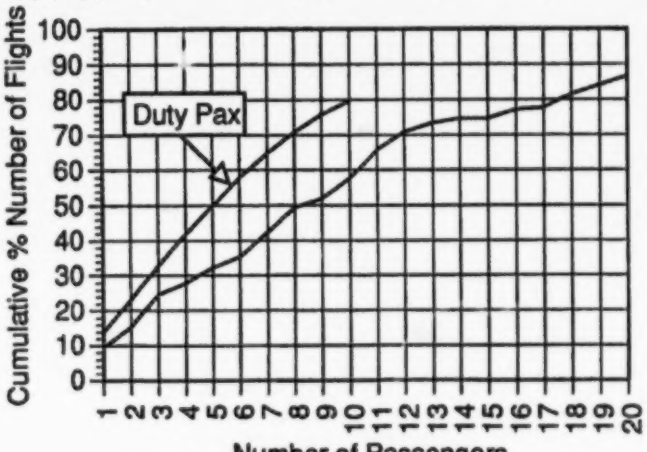

Figure C-2d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

NDHQ – CONTINGENCY (FY's 91/92 – 93/94)

(Total Flying Hours: 388.3; Total # of Flights: 192)

Figure C-3a. Percentage of Total Flying Hours

Figure C-3b. Cumulative Percentage of Total Flying Hours

Figure C-3c. Percentage of Total Number of Flights

Figure C-3d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

AIRCOM (FY's 91/92 – 93/94)

(Total Flying Hours: 310.6; Total # of Flights: 124)

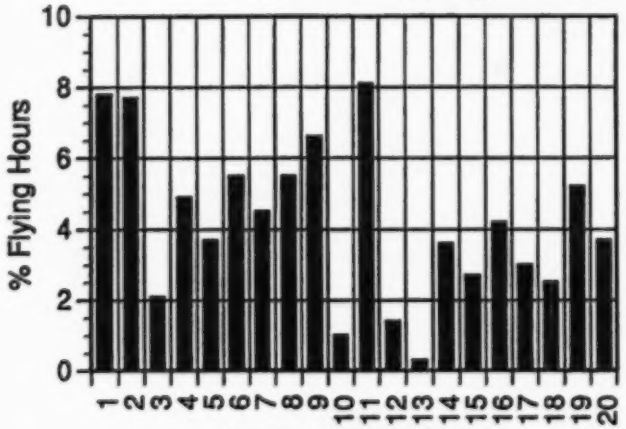

Figure C-4a. Percentage of Total Flying Hours

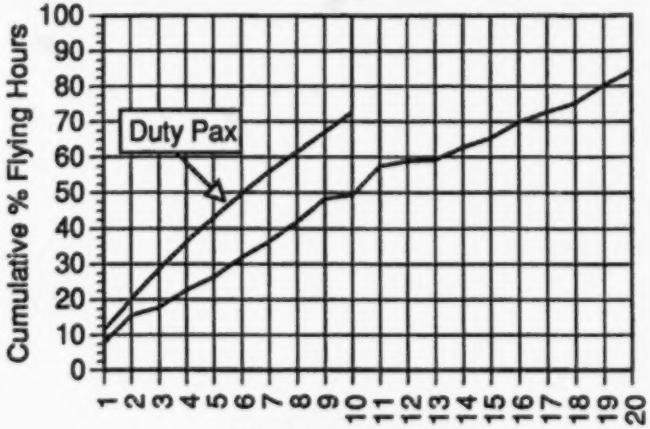

Figure C-4b. Cumulative Percentage of Total Flying Hours

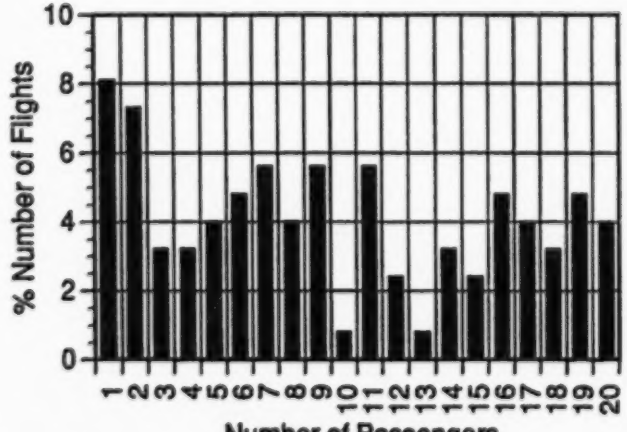

Figure C-4c. Percentage of Total Number of Flights

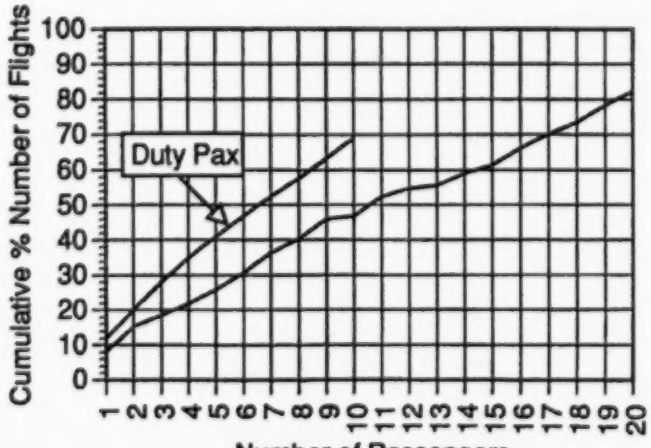

Figure C-4d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

ATG (FY's 91/92 – 93/94)
(Total Flying Hours:44.5; Total # of Flights: 18)

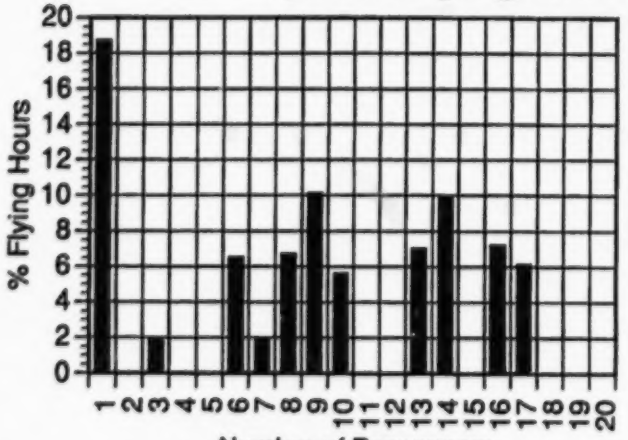

Figure C-5a. Percentage of Total Flying Hours

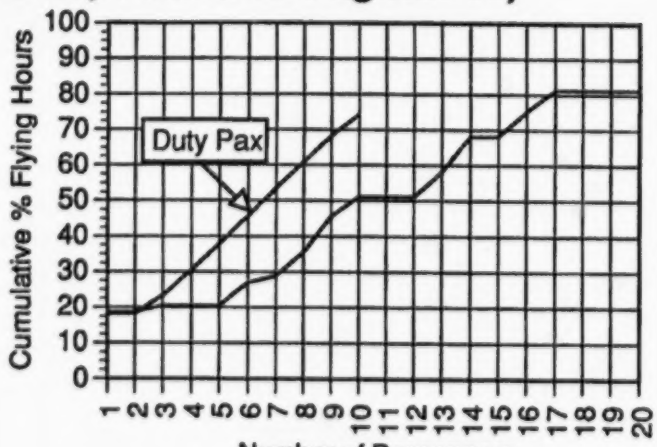

Figure C-5b. Cumulative Percentage of Total Flying Hours

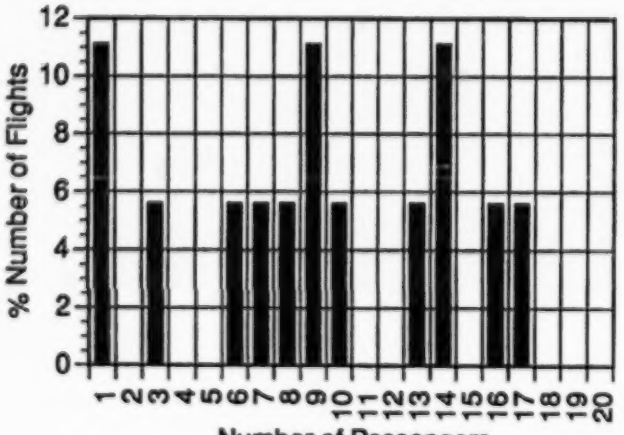

Figure C-5c. Percentage of Total Number of Flights

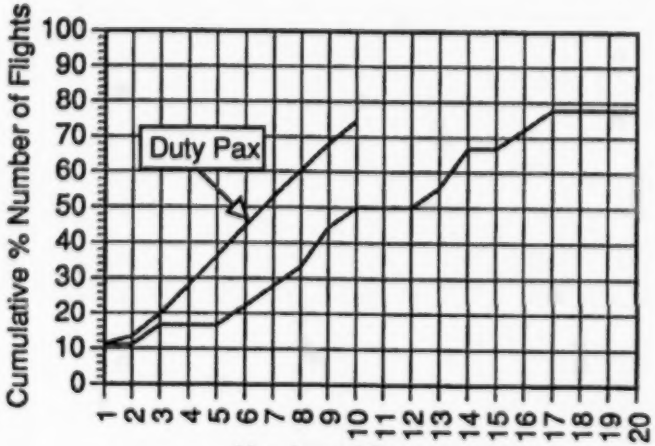

Figure C-5d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

LFC (FY's 91/92 – 93/94)

(Total Flying Hours: 184.4; Total # of Flights: 93)

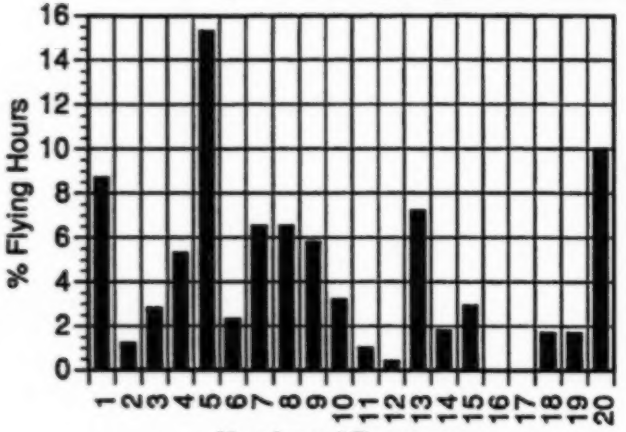

Figure C-6a. Percentage of Total Flying Hours

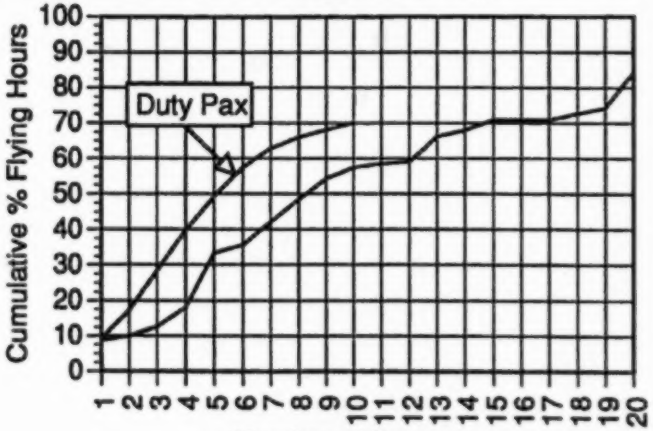

Figure C-6b. Cumulative Percentage of Total Flying Hours

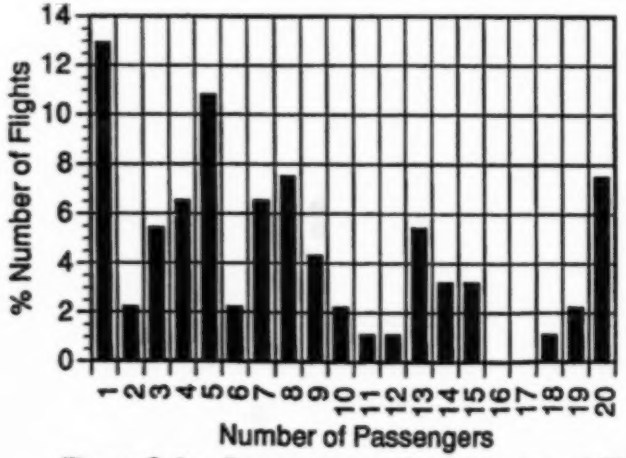

Figure C-6c. Percentage of Total Number of Flights

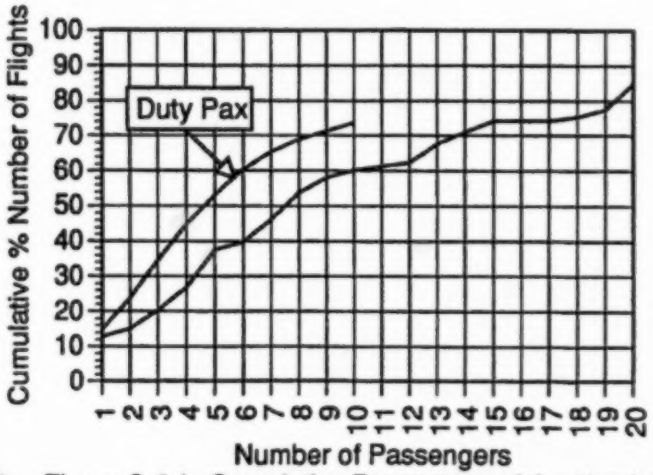

Figure C-6d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (USERS)

MARCOM (FY's 91/92 – 93/94)

(Total Flying Hours: 177.6; Total # of Flights: 78)

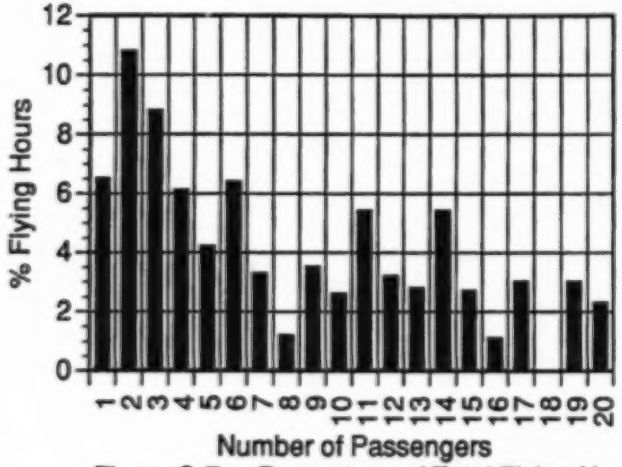

Figure C-7a. Percentage of Total Flying Hours

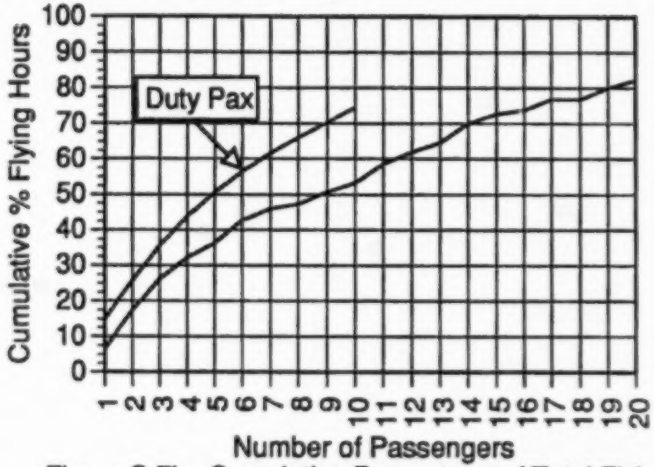

Figure C-7b. Cumulative Percentage of Total Flying Hours

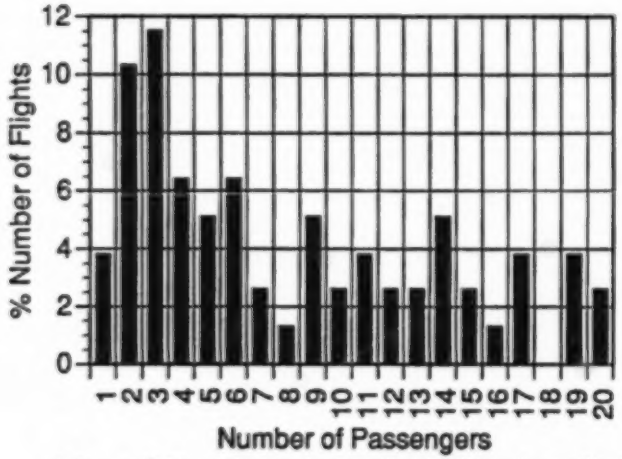

Figure C-7c. Percentage of Total Number of Flights

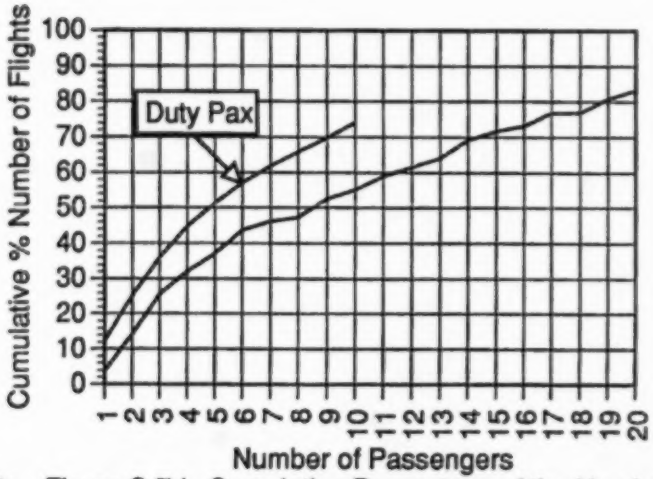

Figure C-7d. Cumulative Percentage of the Number of Flights

Annex C
Op Rsch Staff Note 95/1
February 1995

CC109 – OTTAWA (USERS)

CFSU (FY's 91/92 – 93/94)

(Total Flying Hours: 32.8; Total # of Flights: 9)

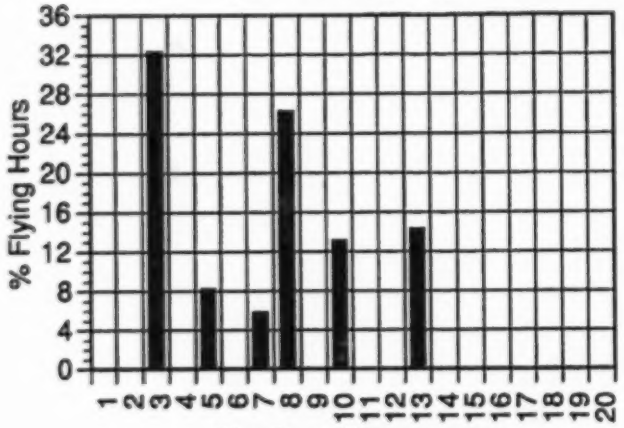

Figure C-8a. Percentage of Total Flying Hours

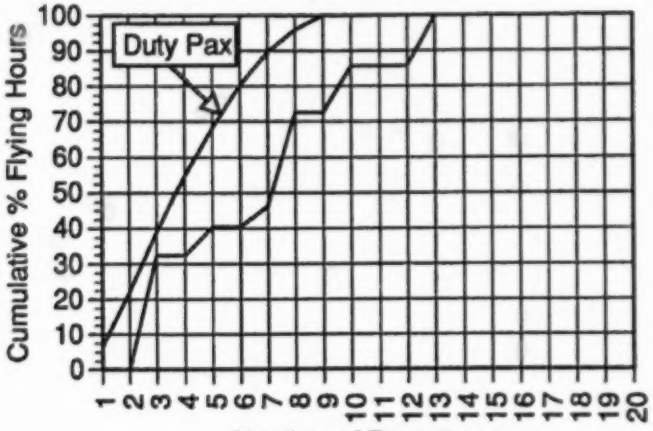

Figure C-8b. Cumulative Percentage of Total Flying Hours

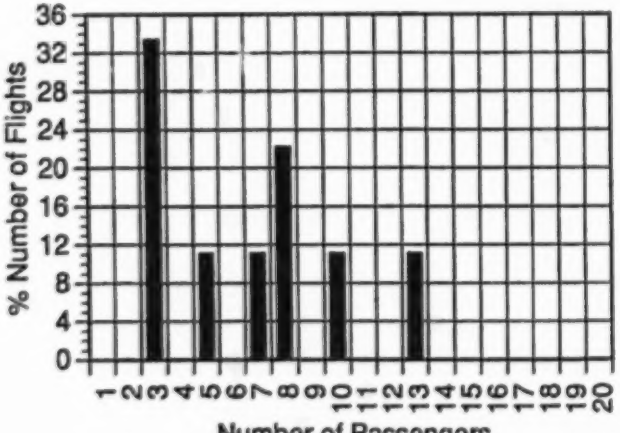

Figure C-8c. Percentage of Total Number of Flights

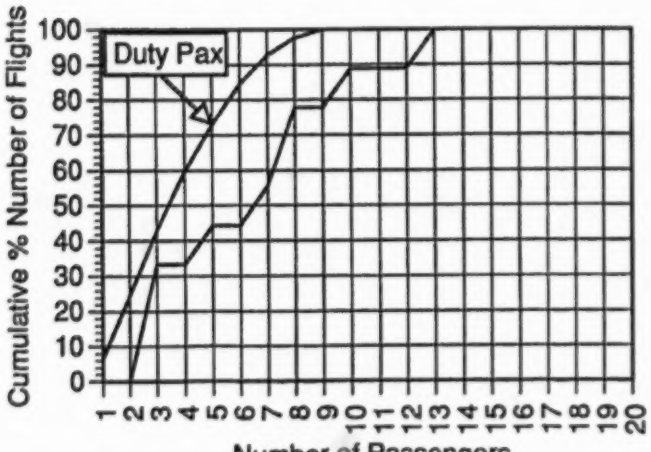

Figure C-8d. Cumulative Percentage of the Number of Flights

CC109 – COLORADO SPRINGS (USERS)

CFSU (FY's 91/92 – 93/94)

(Total Flying Hours: 335.9; Total # of Flights: 108)

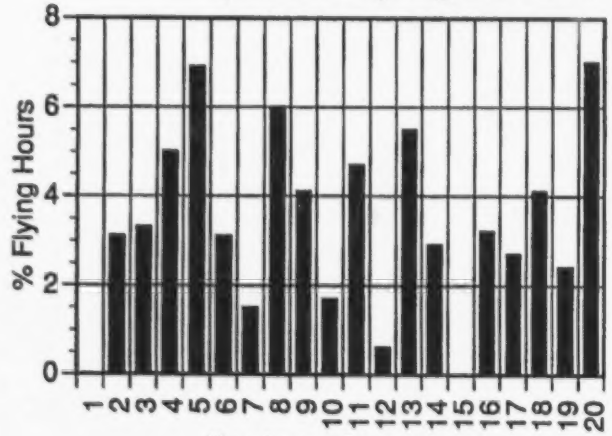

Figure C-9a. Percentage of Total Flying Hours

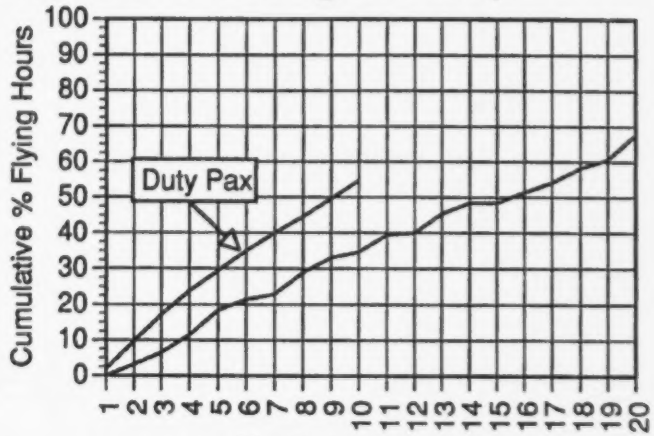

Figure C-9b. Cumulative Percentage of Total Flying Hours

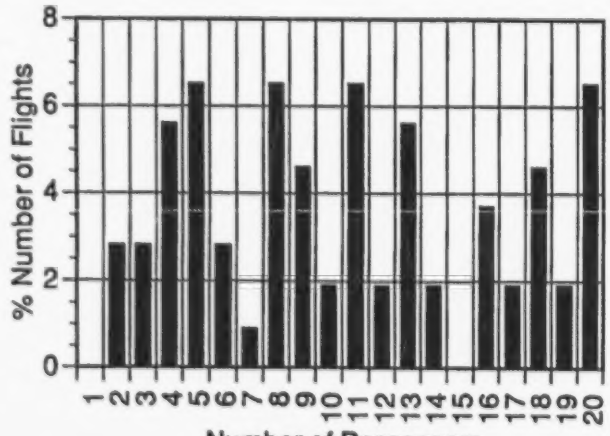

Figure C-9c. Percentage of Total Number of Flights

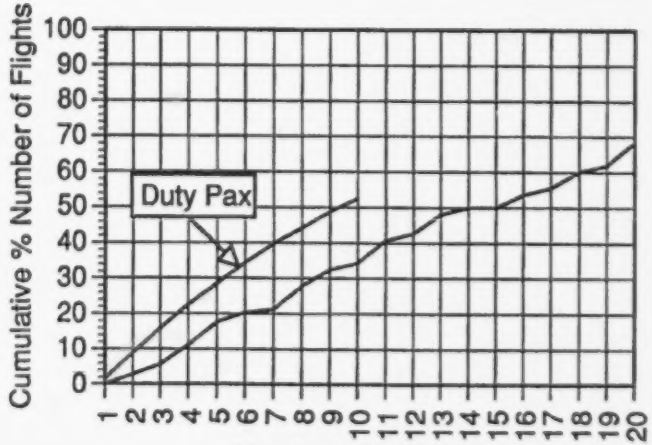

Figure C-9d. Cumulative Percentage of the Number of Flights

CC109 – OTTAWA (ALL TASKINGS/USERS)
(FY's 91/92 – 93/94)
(Total Flying Hours: 2281.6; Total # of Flights: 1069)

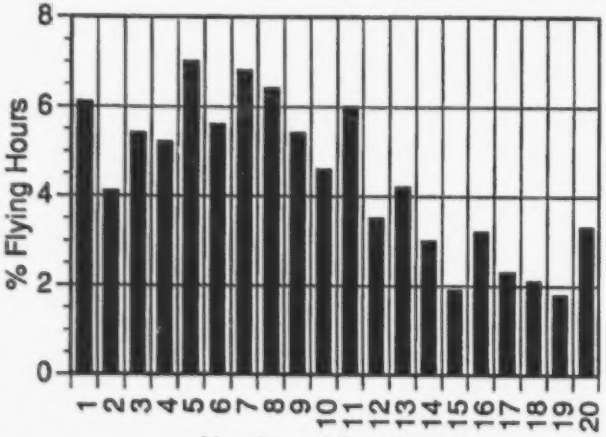

Figure D-1a. Percentage of Total Flying Hours

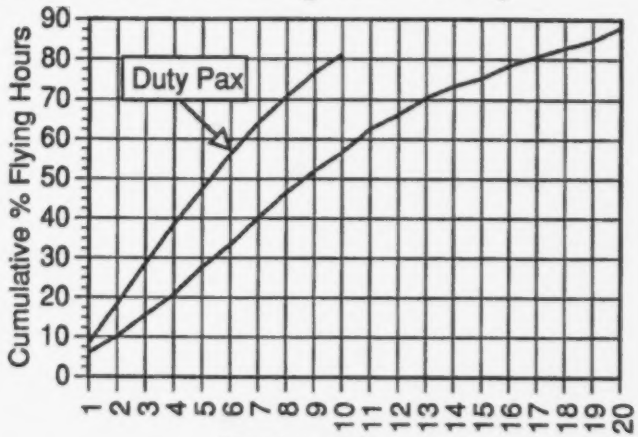

Figure D-1b. Cumulative Percentage of Total Flying Hours

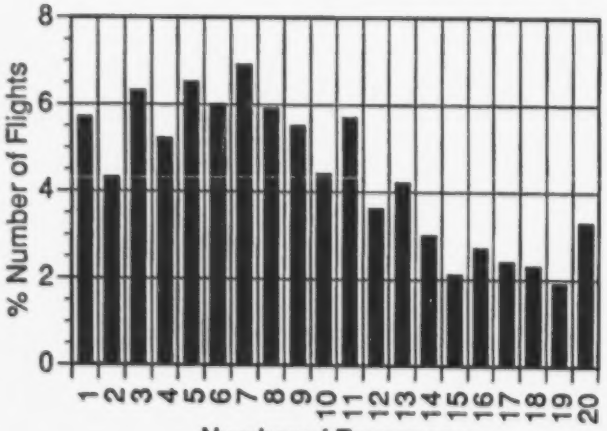

Figure D-1c. Percentage of Total Number of Flights

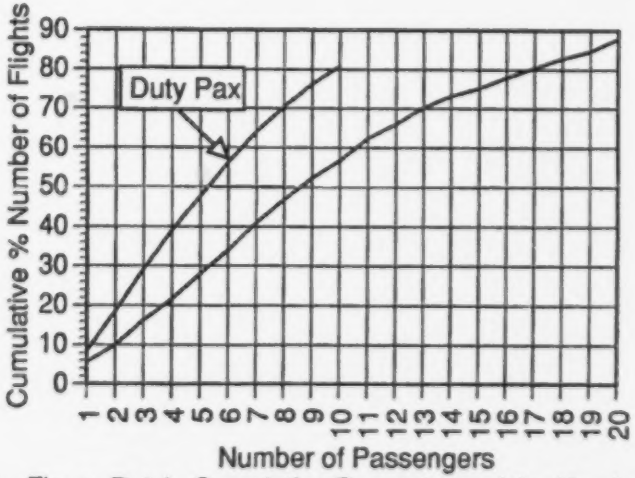

Figure D-1d. Cumulative Percentage of the Number of Flights

CC109 – COLORADO SPRINGS (ALLTASKINGS/USERS)
(FY's 91/92 – 93/94)
(Total Flying Hours: 346.6; Total # of Flights: 111)

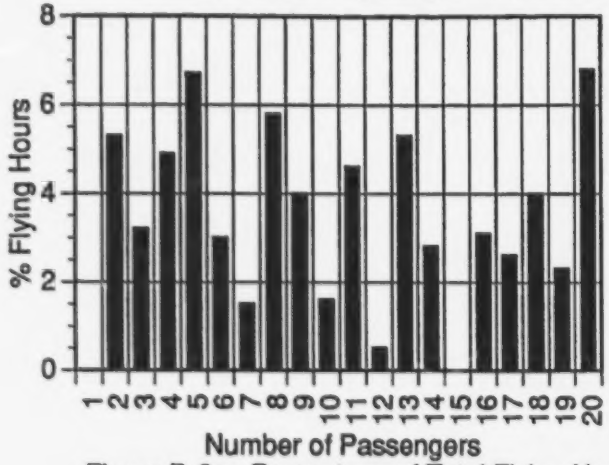

Figure D-2a. Percentage of Total Flying Hours

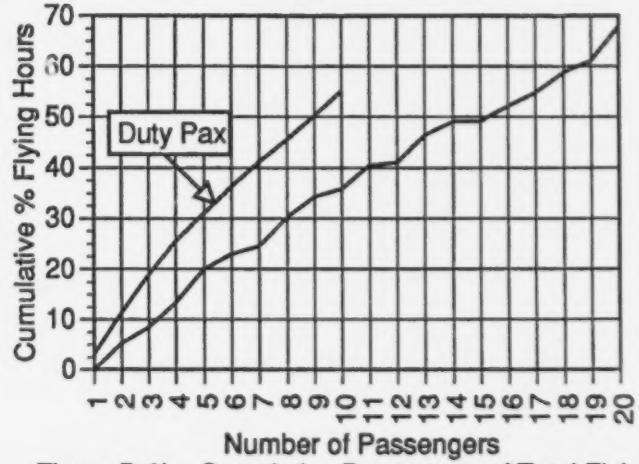

Figure D-2b. Cumulative Percentage of Total Flying Hours

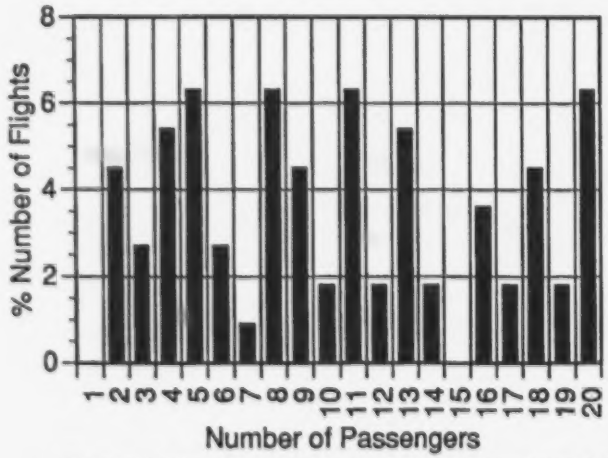

Figure D-2c. Percentage of Total Number of Flights

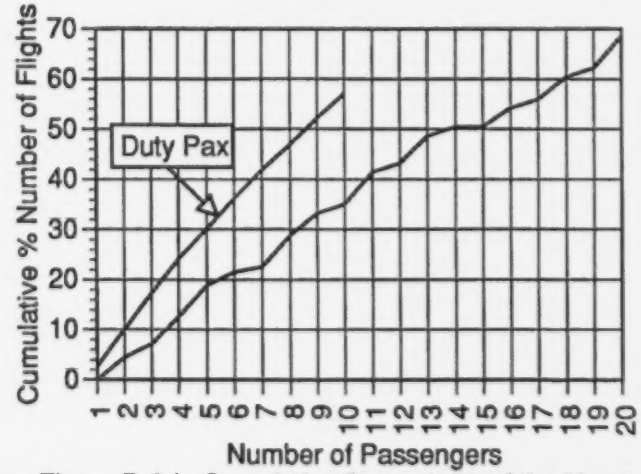

Figure D-2d. Cumulative Percentage of the Number of Flights

CC142 – (TASKINGS)

TRANSPORT (FY's 91/92 – 93/94)

(Total Flying Hours: 213.3 Total # of Flights: 76

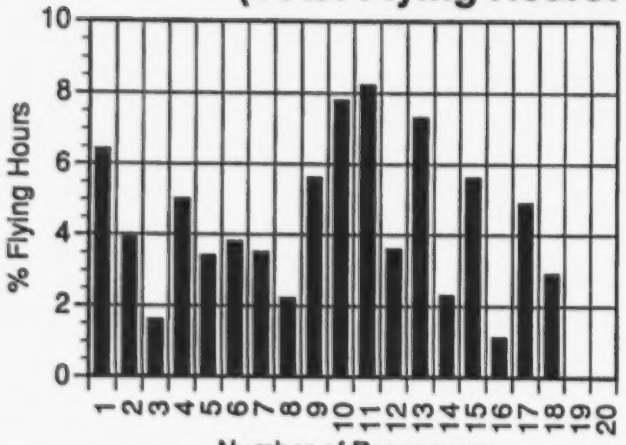

Figure E-1a. Percentage of Total Flying Hours

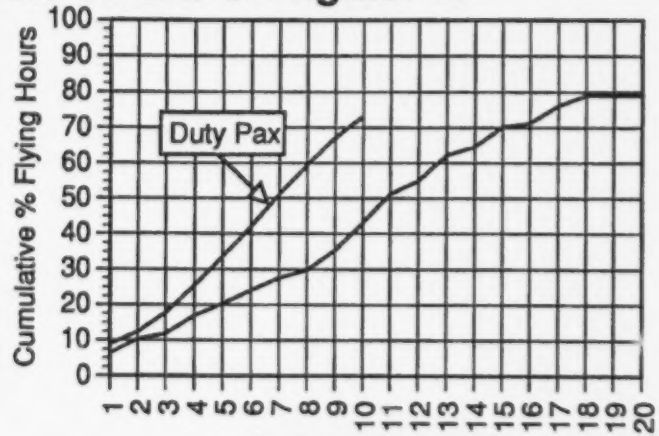

Figure E-1b. Cumulative Percentage of Total Flying Hours

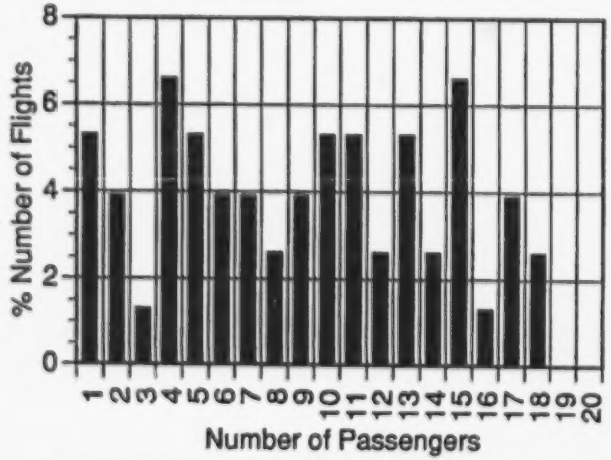

Figure E-1c. Percentage of Total Number of Flights

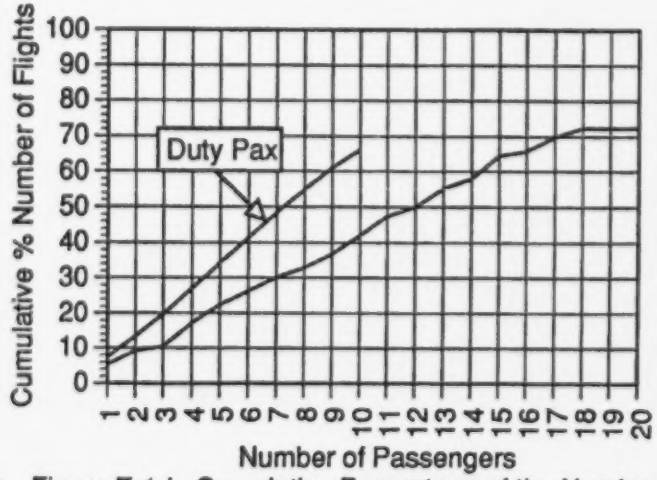

Figure E-1d. Cumulative Percentage of the Number of Flights

CC142 – (TASKINGS)

VIP (AIRCOM) (FY's 91/92 – 93/94)

(Total Flying Hours: 892.9; Total # of Flights: 302)

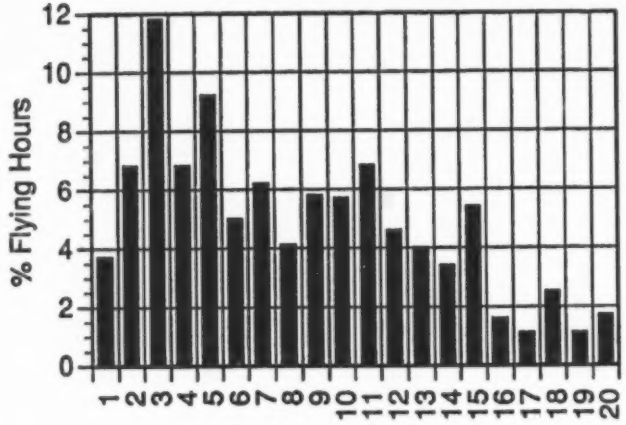

Figure E-2a. Percentage of Total Flying Hours

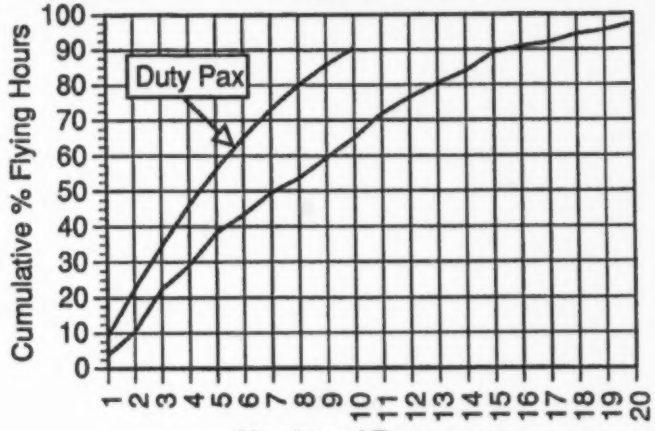

Figure E-2b. Cumulative Percentage of Total Flying Hours

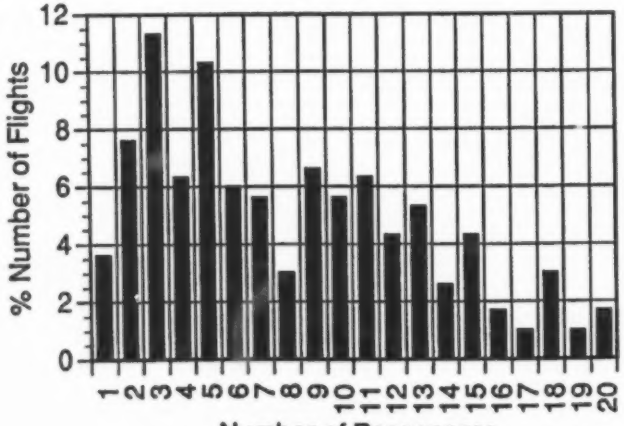

Figure E-2c. Percentage of Total Number of Flights

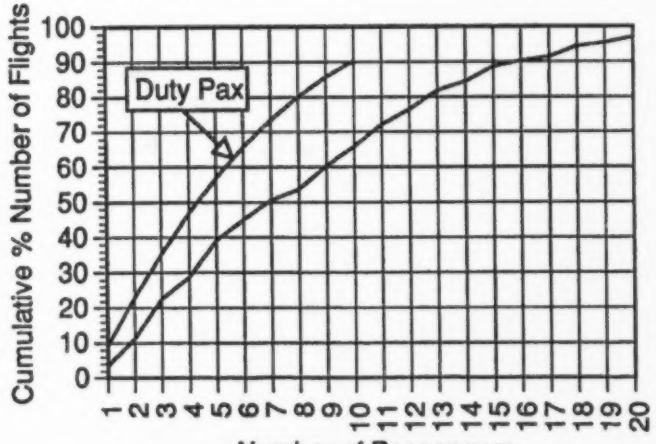

Figure E-2d. Cumulative Percentage of the Number of Flights

CC142 – (TASKINGS)

VIP (NDHQ) (FY's 91/92 – 93/94)

(Total Flying Hours: 165.4; Total # of Flights:56)

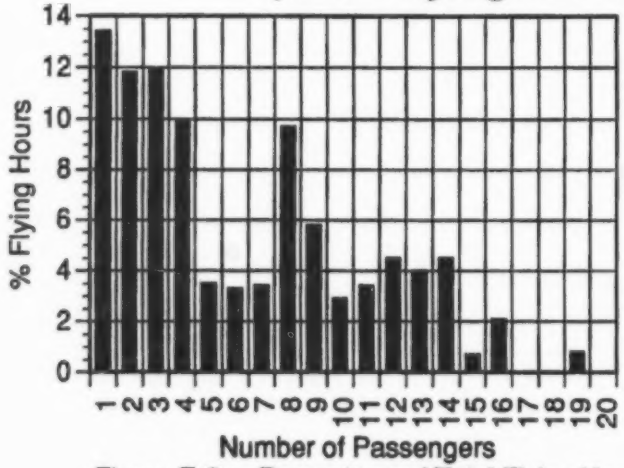

Figure E-3a. Percentage of Total Flying Hours

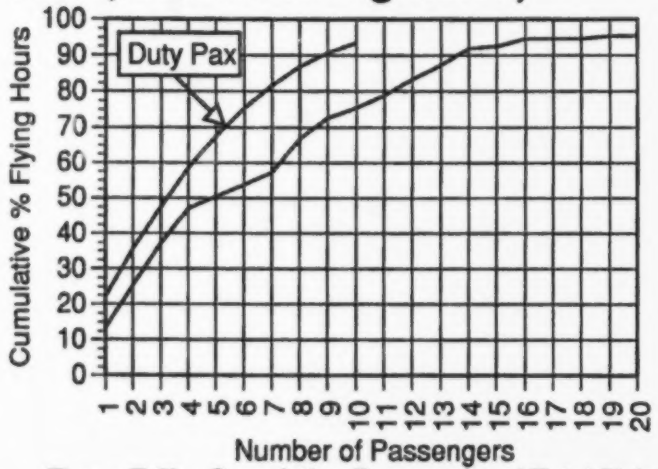

Figure E-3b. Cumulative Percentage of Total Flying Hours

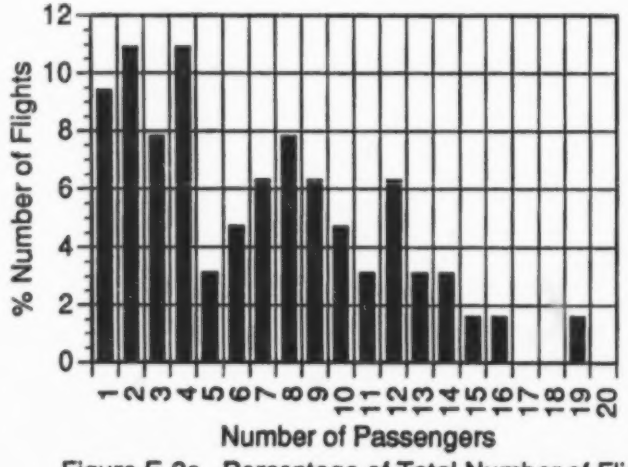

Figure E-3c. Percentage of Total Number of Flights

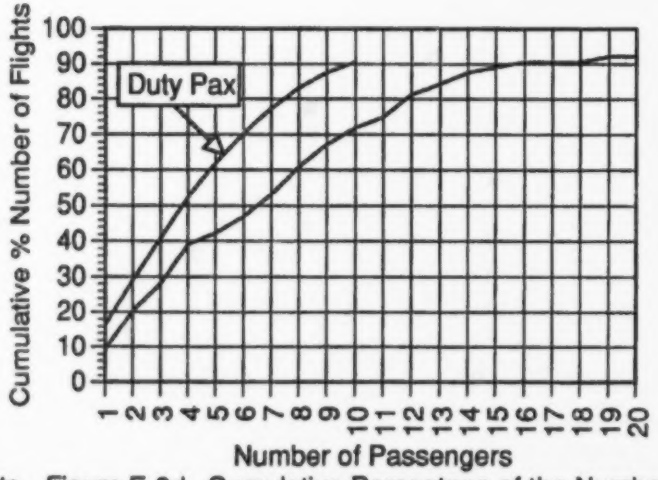

Figure E-3d. Cumulative Percentage of the Number of Flights

CC142 – (TASKINGS)

NFA (FY's 91/92 – 93/94)

(Total Flying Hours: 400.0; Total # of Flights: 142)

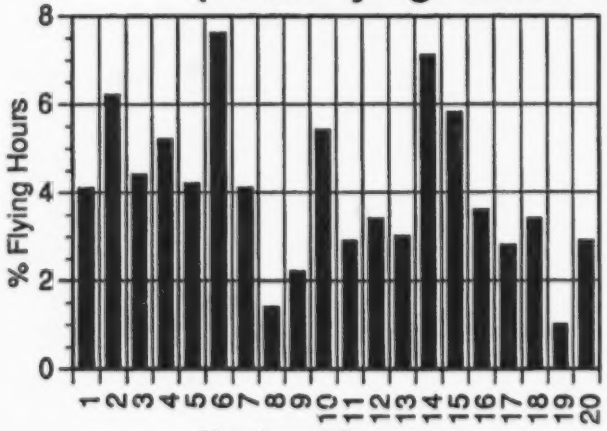

Figure E-4a. Percentage of Total Flying Hours

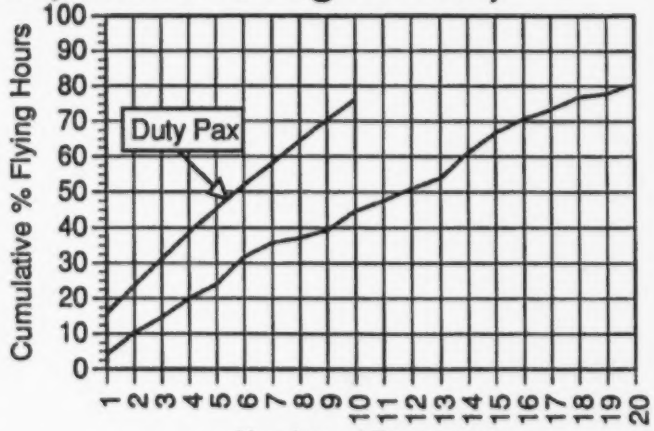

Figure E-4b. Cumulative Percentage of Total Flying Hours

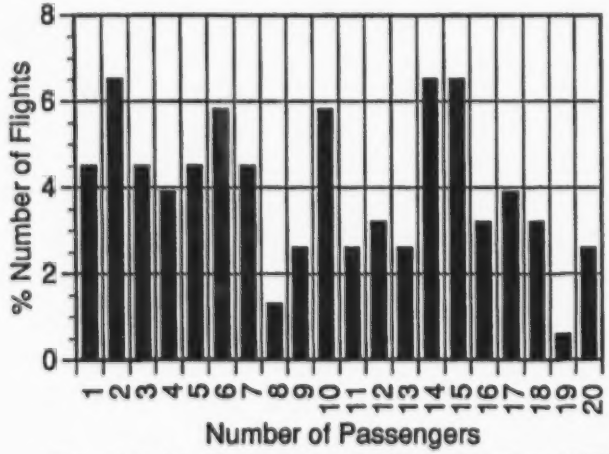

Figure E-4c. Percentage of Total Number of Flights

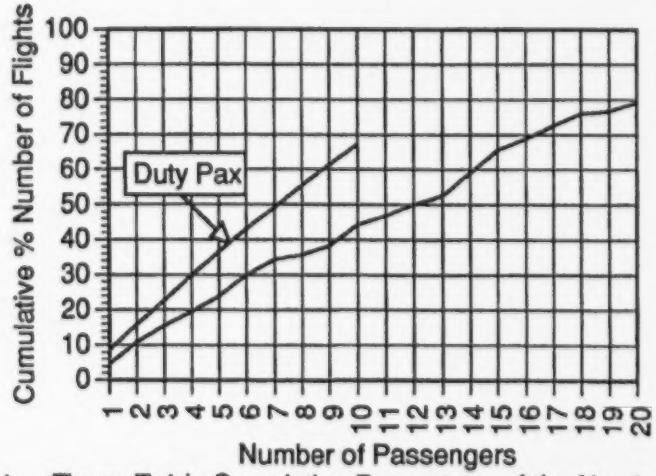

Figure E-4d. Cumulative Percentage of the Number of Flights

CC142 – (ALL TASKINGS)
(FY's 91/92 – 93/94)
(Total Flying Hours:1671.6; Total # of Flights: 576)

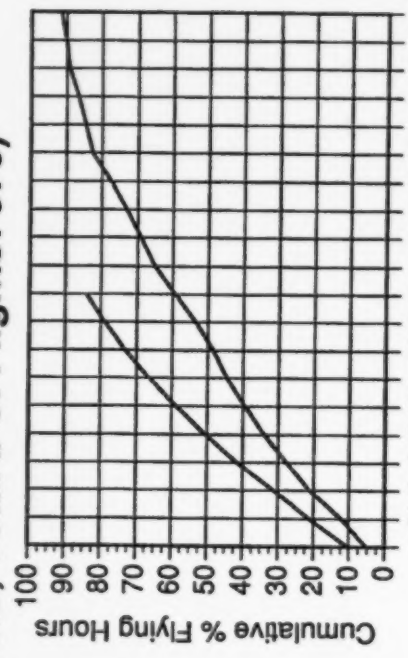

Figure F-1b. Cumulative Percentage of Total Flying Hours

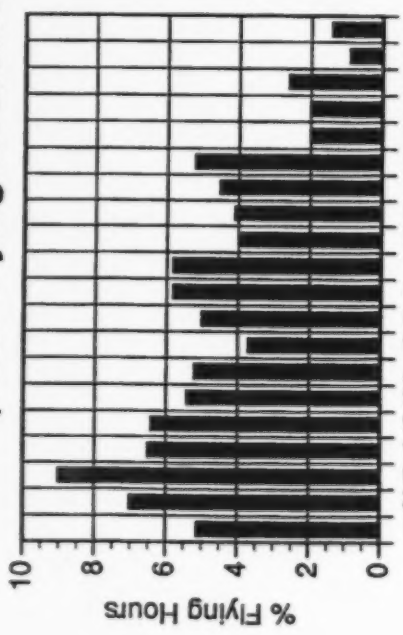

Figure F-1a. Percentage of Total Flying Hours

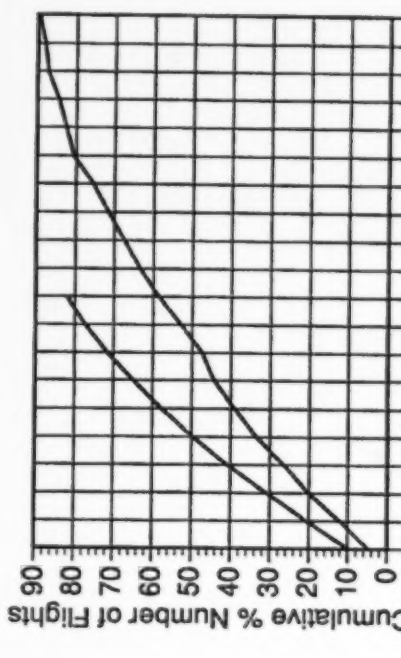

Figure F-1d. Cumulative Percentage of the Number of Flights

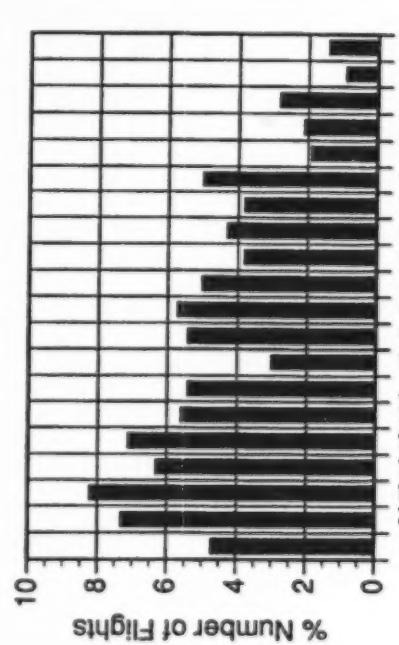

Figure F-1c. Percentage of Total Number of Flights

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